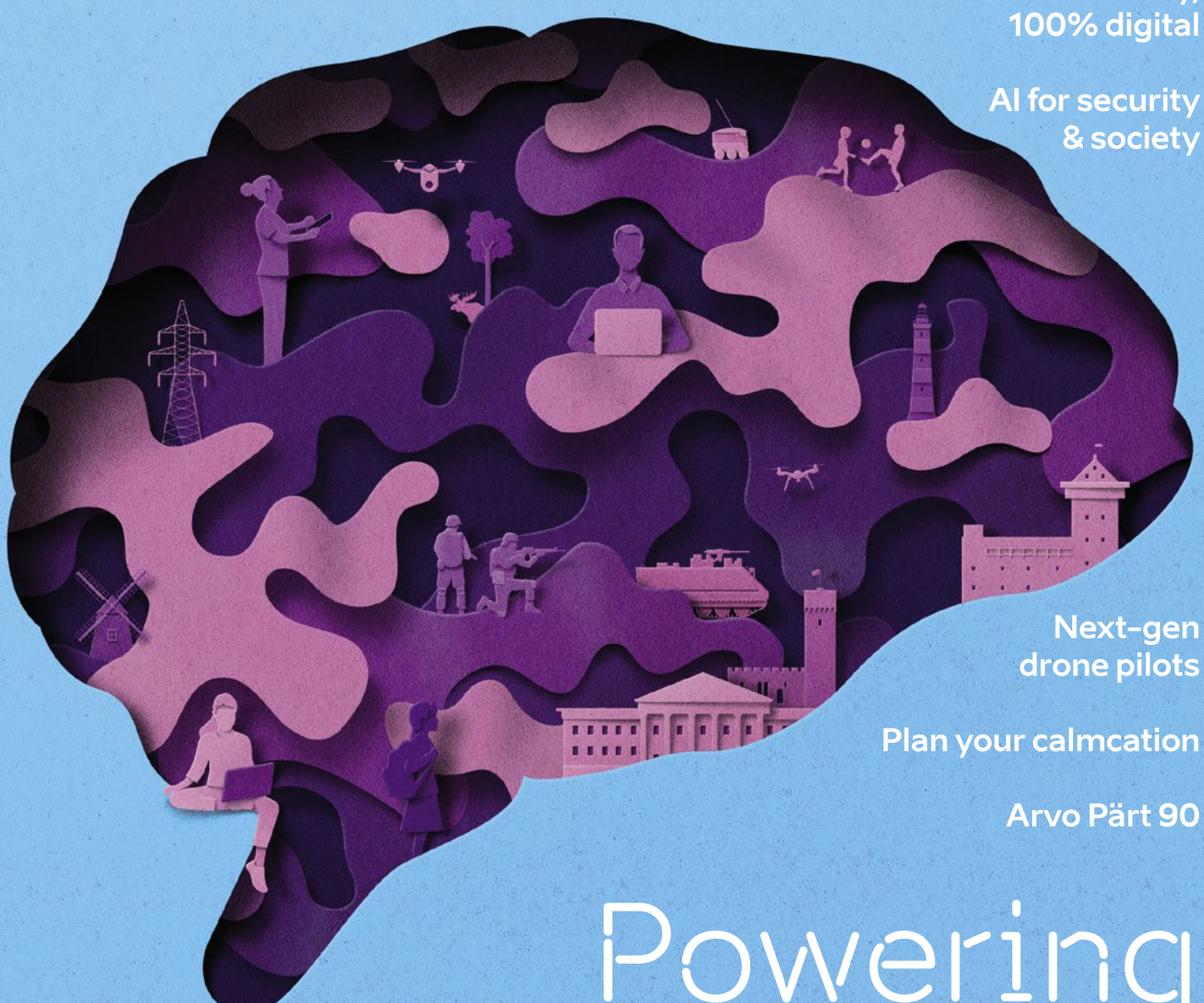
№63 1/2025

life in ESTONIA

A global hub for defence innovation

0% bureaucrazy, 100% digital

AI for security & society



Next-gen drone pilots

Plan your calmcation

Arvo Pärt 90

Powering smart defence



Photo by Kristjan Taal

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Enterprise Estonia helps businesses grow internationally by supporting their expansion and attracting foreign investments to Estonia. With trusted digital solutions, exceptional talent, and a bold, future-focused mindset, Estonia offers an agile environment for global businesses to grow and innovate.

estonia.ee

The production of the magazine has been inspired by green technology

Estonia — succeeding at change

Great ideas are often born out of scarcity. With limited natural resources but plenty of brainpower, Estonians always find clever ways to tackle seemingly impossible challenges. From building one of the world's most advanced digital societies to running a herd of tech unicorns, we have learnt how to make systems that work smarter, faster, and for everyone.

For us, defence is not just military strategy. It's about innovating constantly to stay resilient. It's teachers, coders, entrepreneurs, drone-builders, artists, volunteers. It's the ease of doing business. It's transparency, trust, and the belief that even the best system probably still has a bug somewhere worth fixing.

The feeling that there's always room for improvement is sometimes annoying, but it's also the engine for ambition if mixed with a can-do attitude. We like to think of it as a maker's mindset. And in a world that's constantly shifting, that matters more than ever.

In this issue of "Life in Estonia", we look at what defence and security mean in practice. We look at the hard edge of it: the steel, the code, the startup-led defence industry, and the very real support for Ukraine.

But we also look at the soft power that holds it all together and which is perhaps Estonia's biggest contribution to the world. We create code that protects democracies. We compose music and create art that cut through the noise. We offer a place where people can thrive. With clean air, world-class education, a strong sense of balance, and forests never far from home, Estonia shows that progress doesn't have to come at the cost of quality of life. And now, through initiatives like the Estonian AI-Leap programme, which brings smart AI tools to classrooms, we are shaping a future where technology serves people, not the other way around.



Photo by TalTech

The world's rather unstable right now. For everyone. But that's not new to us. We have learnt how to move forward. Not because things are easy, but because we've trained ourselves to make sense of complexity and get things done.

We hope this issue gives you a glimpse into how we do that.

Sandra Särav,
Deputy Secretary General
for Economy and Innovation at
the Ministry of Economic Affairs

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Inspirational Estonian Defence Week

Estonia excels at making traditional warfare tools smarter. Testament to this is Estonian Defence Industry Week this September, covering the entire Estonian and regional sector, and introducing future warfare technologies manufactured in Estonia.

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Becoming a hub for the smart defence industry

The vigorous growth of Estonian defence industry companies has proven that little Estonia can punch above its weight in the field of high-tech defence systems. According to Taavi Veskimägi, chairman of the Council of the EDIA, Estonia has set the goal of becoming a global innovation hub for the defence industry, where high-tech smart solutions are created at reasonable prices.

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Markus Villig mobilising startups for Europe's defence

Markus Villig, the founder of Bolt, has become an important advocate for the need to develop the defence industry in Estonia and Europe. Estonian Founders Society started to organise Defence Meetups to give a startup-like boost to the development of the industry.

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NAFO expansion remains non-negotiable

NAFO is an internet meme and social media movement dedicated to disrupting Russian propaganda while raising many millions for the defence of Ukraine. NAFO volunteers have bought hundreds of SUVs, painted them in camouflage, stuffed them with vital supplies, and driven them to defenders on the frontlines in Ukraine.

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Frankenburg Technologies: Estonia's rising force in European and NATO defence

Frankenburg Technologies is rapidly becoming one of Europe's most closely watched players in the security landscape. They have hired both military brass and global engineering talent. According to their CEO, they're not here to "support" or "contribute"; they're building the things that will help win a war.

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DefSecIntel Solutions: Estonia's vanguard in AI-driven defence technology

DefSecIntel Solutions aims to play a crucial role in protecting the external borders of the EU and NATO. It has a clear and ambitious vision: to pioneer the development and deployment of AI-powered solutions for surveillance, drone countermeasures, and autonomous maritime operations.

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HEVI Optronics: small team, sharp vision

Estonian tech firm HEVI Optronics has risen from a startup idea into a serious international player in the field of military-grade camera systems. The company has built a reputation for precision engineering, strategic focus, and quiet determination.

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Helsing: the AI powerhouse reshaping Europe's military future

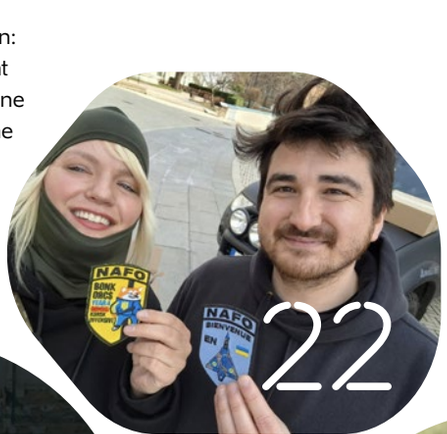
A quiet revolution in Europe's defence capabilities is underway, and at the heart of it is the German startup Helsing, which is rewriting the rules of warfare using algorithms and precision mass. Now, Helsing is expanding eastwards and launching production in Estonia.

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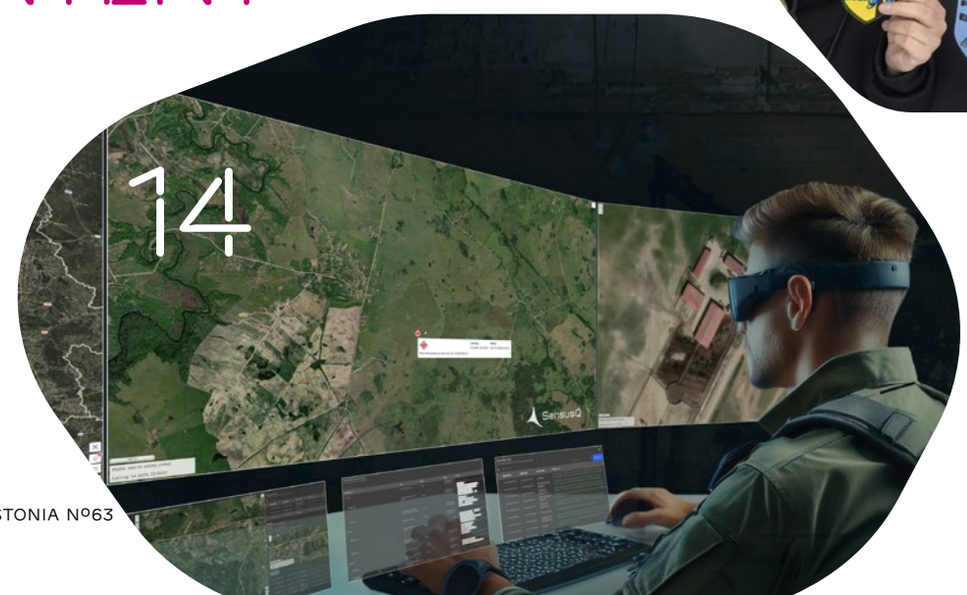
A league of their own

Drone flying could easily become the new national sport of Estonia while better preparing the nation for any possible military action. Learning how to assemble and fly a drone is a skill that can become handy in any situation. As the Ukraine war has shown, drones have become decisive weapons of modern warfare.

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At Vabamu's two museums — the Museum of Occupations and Freedom and the KGB Prison Cells — visitors can learn about Estonia's recent history through people's personal stories. Their youth programme NoVa engages students in dialogue and encourages them to think about the meaning and value of freedom, democracy, and security.

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Enhancing security through language learning — the new digital platform ALPA Kids

The Estonian-made educational application ALPA Kids empowers children to keep learning through educational games, helping them preserve and develop their native language even when access to education in their own country is disrupted by war or hardship.

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Erik Karlsen: an international journey to Estonia

American-born Erik Karlsen's journey to Estonia has been a story of adventure, love, and adaptation. Setting up in Estonia might be complex, but this is where a government-funded initiative, Work in Estonia, aids in covering the full talent cycle from attraction to retention and settling in.

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Portfolio. Enn Põldroos

In Estonian art history, Enn Põldroos is seen as an adventurous artist who is known for experimenting with a wide variety of painting techniques and styles. His latest solo exhibition, "Museum of Obsessions", highlights recurring motifs and genres — i.e. his "obsessions" that have permeated his long creative journey and to which the artist keeps coming back.

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Arvo Pärt 90

This year, one of the most notable composers of our time, Estonia's Arvo Pärt, turns 90. The event is celebrated by a number of concerts and other important events in Estonia and around the world.

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Year of the Estonian Book 2025

2025 marks 500 years since the publication of the oldest printed word in Estonian. "Life in Estonia" asked the President's Book Club and the Estonian Literature Centre for book recommendations for our readers who want to get acquainted with Estonian literature.

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When the fates align: 5 acclaimed foreign chefs achieve culinary excellence in Estonia

In recent years, Estonia's restaurant scene has become increasingly vibrant — several talented chefs from around the world have arrived, opening their own restaurants and bringing their own unique culinary approach, which has earned them Michelin Guide recognition.

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In defence of peace and quiet

Estonia doesn't have world famous tourist attractions, but we have the space to rest, relax, and recharge. This is why we are all for "calmcations" — time away to protect your peace of mind from the demands of daily life.

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Events Calendar: Highlights from June to December













Photo by Renee Altrov

Estonia is punching above its weight

According to the recent Good Country Index, Estonia, Finland, and Slovenia contribute more to humanity and the planet relative to their size than almost any other country on Earth.

Estonia made a notable leap in the **Good Country Index** rankings, rising from 22nd to 9th in terms of its overall contribution to humanity's collective well-being. Finland takes the top position (previously 5th), and Slovenia jumps from 17th to 8th.

The study's author, **Simon Anholt**, noted that Estonia's position in the global top ten is a remarkable achievement. "It's difficult to overstate what an extraordinary result this is — the first time ever that the Top 10 of the Good Country Index has included a country with GDP per capita under $33K, a country not in Western Europe (apart from New Zealand, Canada, and Japan)," says Anholt. He added that building a country's reputation through mere slogans and messaging can't be done; it must be earned by doing things that genuinely matter.

First issued in 2014, the Good Country Index measures countries' contributions to the global good based on publicly available factual data, considering factors such as country size and GDP. In this year's index, Estonia saw its most significant improvement in the "Global contribution to world order" category, which jumped from 84th to 18th.

Estonia is also ranked as the 3rd most significant cultural contributor globally through international events, cultural exports, press freedom, and more. While Estonian cultural heritage may not be as widely known as larger countries, this research shows that Estonia is among the best in the world at sharing and disseminating its cultural values.

"The Good Country Index provides important evidence that Estonia as a state, its people and society contribute significantly to the global good across various fields. It's great to see that many international reputation surveys reflect this," says **Kata Varblane**, director of country promotion at Enterprise Estonia. The Country Promotion department at Enterprise Estonia has conducted several international surveys this year on Estonia's familiarity and reputation. The research confirms that although Estonia's international awareness remains relatively modest, perceptions of Estonia among those who know it have risen significantly in recent years, particularly regarding the country and its governance.

According to the **Nation Brands Index**, which evaluated Estonia's reputation in 20 countries, Estonia is perceived primarily as a state that respects human rights, acts responsibly in maintaining peace and security, and protects the environment. Since 2009, Estonia's reputation has improved substantially, moving from 42nd to 35th place.

The **Global Soft Power Index** maps countries' international awareness and reputation and shows that people strongly associate Estonia with ease of doing business, helping other countries, and sustainability. Respondents rated Estonia's ease of doing business as more than twice as significant as the global average.

Good Country Index results:
index.goodcountry.org



Photo by Robert Parelo

As digital as you can get

A blueprint for digital governance

Estonia's achievement highlights its innovative approach to governance:
100% online services: Estonia has reduced bureaucracy through seamless digital solutions.

Scalable innovations: Estonia's e-government model is open for adoption worldwide, offerin tools and systems that any nation can implement.

Human-centric technology: Estonia prioritises simplicity and accessibility, empowering citizens while ensuring security and transparency.

e-estonia.com

Estonia has reached an extraordinary milestone by becoming a country that digitalises 100% of its government services. As of December 2024, every service — even filing for divorce — can now be completed online, marking a new era in citizen-centric governance.

Estonian citizens can now easily access all government services through a portal using a single, centralised login that connects users across the ecosystem of services needed.

"0% bureaucrazy, 100% digital"

Estonia has pioneered a vision of digital government that has been made possible through public-private partnerships since 1991. E-banking solutions were introduced in 1994, followed by e-Cabinet meetings and the e-Tax Board in 2000, enabling Estonians to declare taxes online. Today, the average tax filing lasts 3 minutes, and 98% of the population declares their income electronically. The average length of Estonian cabinet meetings has been reduced from five hours to 30 minutes. Mandatory digital identification cards allow for digital signatures that save 2% of Estonia's GDP annually. i-Voting technology means that one-third of votes in elections are cast online, with votes from more than 110 countries depending on the election. KSI blockchain, e-Health and e-Prescription integration combined with the e-Residency program complete the digital services spectrum for Estonians.

"Estonia is with me, everywhere," says **Kersti Kaljulaid**, former President of Estonia. "Whether signing state documents from Antarctica or voting on a bus in Luxembourg, I've never felt cut off as a citizen, no matter where I've been. Estonia has proven that the red tape so many accept as inevitable is not necessary — we've fixed it. We remain committed to leading the way in building an even more seamless digital future."

Where to go next?

Former Estonian President **Toomas Hendrik Ilves,** considered one of the key architects of the digital nation, predicts that, in the future, Estonians will continue to apply the same creativity that has allowed them to make all state services available digitally. "Estonia has always taken technologies created elsewhere and done ingenious things with them," Ilves said, citing the creation of X-Road, the secure data exchange layer that serves as the backbone for the country's ecosystem of digital services, and Skype as examples of Estonians taking existing technologies and devising new products and services.

"We have to do the same thing when someone comes out with a great new technology in AI. The road forward for us as a country is to implement those new governance and public services developments," President Ilves underscored.

He also said that even if all services are now available digitally, the focus should continue to be on making governance easier for citizens. "You can now go from government office to office from your desk," Ilves pointed out. "But the goal should be to offer people better solutions to their problems."

Ilves: "Estonia's greatest achievement as a digital nation is not that one can get divorced online or that Estonians can vote in elections from anywhere in the world," he said. "The most outstanding achievement is the change in how people think and relate to each other. It's the mindset that has come with these various sociotechnological developments," President Ilves remarked. "The idea that you can do things in the digital era that you could not do before. In this way, you can change your possibilities and opportunities in life."

AI Leap: a new chapter in e-Estonia's development

On the 1st of September 2025, Estonia, one of the world's most advanced digital societies, will launch AI Leap 2025 — an education programme inspired by Tiger Leap and developed through public–private collaboration. This programme will provide Estonian students and teachers with free access to world-class AI-based educational applications, along with the necessary skills to use them effectively in their studies, marking the next chapter in Estonia's digital society journey.

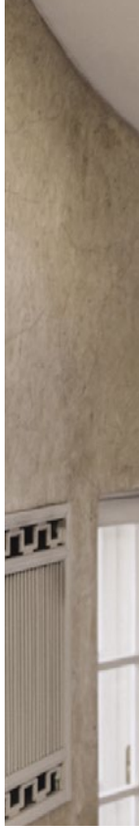


Photo by Tanel Meos

What is AI Leap 2025?

AI Leap is an educational programme inspired by the Tiger Leap initiative, created through public and private sector collaboration. It provides Estonian students and teachers with access to the world's leading AI-based learning applications and the necessary skills to use them wisely in education.

In the first phase of the project, 20 000 high school students in grades 10–11 and their 3000 teachers will gain access to leading AI-powered educational applications on the 1st of September 2025.



Photo by Raul Mee

Estonian President Alar Karis, the initiator of the programme, together with the team behind the AI Leap programme

Goals of AI Leap

Maintain the high quality of Estonian education by providing students and teachers with modern learning tools that make them smarter learners.

Integrate technology seamlessly into education, providing knowledge and support for the effective use of AI-based learning software.

Strengthen the international competitiveness of Estonians.

The programme builds on the legacy of Estonia's historic **Tiger Leap** programme from nearly 30 years ago, which brought computers and the internet early to all Estonian schools and laid the foundation for the country's emergence as a digital pioneer. AI Leap will be the next such public—private partnership aimed at integrating AI skills and capabilities seamlessly into education.

"Just as the Tiger Leap programme initiated the development of e-Estonia, for which we are still known internationally today, we are now starting a new chapter in the development of our education system and digital society," says Estonian President **Alar Karis**, the initiator of the programme. "Artificial intelligence has permanently changed the world, and like all sectors, the education system must adapt to these changes."

"By implementing the best available technology in the education system and making learning not only smarter but also more personalised, it will help Estonia become one of the world's smartest nations. This way, AI Leap will help smart solutions reach all sectors and increase the international breakthrough capability of Estonians and the Estonian economy," Karis says, outlining the programme's vision.

The next chapter in Estonia's digital society journey

"Estonia's economic competitiveness depends on how well we can prepare young people for the age of artificial intelligence," says Minister of Education and Research **Kristina Kallas**. "In order for AI to support not only learning but also our economic growth, we will invest strongly in teacher training as part of the AI Leap. Well-prepared teachers will be able to implement AI capabilities smartly in schools."

"In the future job market, the advantaged will not be those who can use AI the most, but those who can use it in the smartest way," says **Linnar Viik**, co-founder of AI Leap and one of the original architects of Tiger Leap. "The education system cannot ignore or ban new technologies. Instead, schools must lead the implementation of technology by providing a supportive framework."

The key to educational transformation is the teacher

The AI Leap programme does not aim to simply increase the role of technology in education — the change must be substantive. This is an educational transformation — a new approach to how we acquire knowledge and support learning and teaching with modern technology.

AI Leap is not an optimisation programme but rather a shift towards a more personalised learning system. AI enables personalised learning by providing each student with an experience tailored to their pace and style. This does not mean that teachers will lose their role. On the contrary, they will become even more important as instructors who teach critical thinking and direct students in correctly utilising the knowledge offered by AI.

International partnerships

In cooperation with the Ministry of Education and Research, teacher training is planned by autumn 2025, after which students will be given access to the world's leading AI applications for learning. Negotiations have begun with global leading AI developers OpenAI, Google, Anthropic and Microsoft, with plans to involve others as well.

"Millions of students around the world are already using ChatGPT to enrich and personalise their learning. Estonia is setting an example for the world as one of the first countries to fully integrate AI into its education system for the benefit of all students and teachers," says **Leah Belsky**, vice president of education at OpenAI.

"Estonia has been an international leader in educational improvement. This initiative shows us what's possible when a country builds on its successes and thinks big about AI and education," says **Neerav Kingsland**, head of business development at Anthropic. "By thoughtfully integrating AI tools to help teachers and support students, Estonia is creating a model that other countries will likely follow. We're proud to support Estonia's vision of using AI to help improve the lives of teachers and provide an amazing education to every student. We're excited to work with the government to offer equal access to this transformative technology and help ensure its future workforce is AI-ready."

e-Governance Conference 2025: from bytes to benefits

28th – 29th of May 2025 in Tallinn



Photo by Raigo Pajula

This conference is where strategy meets action. Join over 450 global leaders, innovators, and policymakers to explore how governance, cybersecurity, interoperability, data, and digital services intersect with economic development. The conference promises rich, insightful discussions and invaluable networking opportunities featuring notable speakers along with more than 60 distinguished digital leaders and experts from Estonia and worldwide.

When you attend the conference, you will participate in vibrant discussions on four stages, six practical workshops, and an inspiring expo area while enjoying the coastal charm of Tallinn's trendiest neighbourhood, Noblessner.

egovconference.ee

The speakers include **Alar Karis**, President of Estonia, **Liisa-Ly Pakosta**, Minister of Justice and Digital Affairs (Estonia), **Stefan Andonovski**, Minister of Digital Transformation (North Macedonia), **Matthew Blakemore**, CEO of AI Caramba! (UK), **Lili Milani**, Head of Estonian Biobank, and others.

Photos by Andres Raudjalg



Inspirational Estonian Defence Week

Kalev Koidumäe, CEO of the Estonian Defence and Aerospace Industry Association, addressing the event

Estonia's defence industry stands out, and for good reason — while we cannot compete with major countries in mass production, we excel at making traditional warfare tools smarter. This is a skill highly valued worldwide. Testament to this is Defence Industry Week, covering the entire Estonian and regional sector, held right here on Europe's eastern border.

The aim of the **Defence Week**, which will take place simultaneously at Tallinn's Kultuurikatel Creative Hub and Tartu Ülenurme Airport from the **22nd to 26th of September 2025**, is to introduce defence industry companies of Estonia and its neighbouring countries and the products and technologies they are developing. The focus is on developing cooperation, establishing investor relations, and having discussions on defence industry and security policy with the participation of domestic and international experts.

The Estonian defence sector has grown significantly in recent years. In 2024, the industry reached a turnover of approximately €500 million, with 350 million coming from exports — this represents an annual growth of 30%. The sector now comprises around 170 companies, with nearly 20 new entrants joining over the past year.

What makes Estonia's defence industry unique is its focus on high-tech solutions rather than conventional weaponry. "We will never manufacture tanks, but we can make them smarter. If someone else provides the steel, we will add the intelligence," explains **Kalev Koidumäe**, CEO of the Estonian Defence and Aerospace Industry Association. This approach has proven successful — Estonian companies now export to at least 10 NATO countries, with exports accounting for 70% of the sector's revenue.

"With NATO countries increasing their defence spending — global defence expenditure grew by 6.8% in 2023 and by an additional 7.4% in 2024 - Estonia has positioned itself as a centre for defence industry innovation and production," says Koidumäe. He emphasises that if Estonia is serious about developing its defence industry, it is crucial to showcase its products domestically. "Estonian Defence Week enhances Estonia's visibility on the international stage and reinforces the perception that we are a reliable and credible partner, bringing experts from around the world under one roof each year to drive the development of the defence industry not only in Estonia and the region but globally."

The war in Ukraine has served both as a catalyst and a testing ground for Estonian defence technology. More than 10 Estonian defence industry companies are currently operating in Ukraine, providing solutions ranging from sensors and surveillance equipment to unmanned platforms, counter-drone systems, field hospitals, and training. "The battlefield in Ukraine is the moment of truth, revealing which technologies actually work," notes Koidumäe.

'We will never manufacture tanks, but we can make them smarter. If someone else provides the steel, we will add the intelligence'



Vegvisir Virtual Command Station

Future warfare technologies manufactured in Estonia

Estonian defence industry companies are characterised by their focus on high-tech solutions that meet the needs of modern warfare, where machines are increasingly replacing human soldiers on the battlefield.

It is often said that warfare today resembles an IT battlefield. Therefore, it is no surprise that Estonia, known as an IT powerhouse, produces companies capable of delivering solutions that are already highly valued worldwide for their uniqueness. Thanks to these innovations, several Estonian companies have the potential to grow into globally influential enterprises.

Here, we highlight some of the most important companies and their cutting-edge products that are already making a significant impact on the battlefield.

Unmanned platforms

Established in 2013, **Milrem Robotics** is the world's leading developer of robotics, autonomous systems, and systems integrators. The company's key products are the THeMIS UGV, the RCVs HAVOC, VECTOR, and the MIFIK — Milrem Intelligent Functions kit.

The THeMIS Unmanned Ground Vehicle (UGV) is an advanced multi-role defence platform designed for various operational tasks. Its modular and versatile design allows customisation from combat configuration to intelligence and logistics operations support, all while reducing risks to human lives. The vehicles are currently assisting Ukrainian soldiers in the war with Russia.

The HAVOC 8×8 Robotic Combat Vehicle (RCV) is an advanced ground combat platform enhanced with intelligent functions and designed for modern warfare. This vehicle is equipped with AI-driven navigation and excels in offensive and defensive operations across diverse terrains, environments, and climates.

The VECTOR RCV is designed to revolutionise modern battlefield operations. As a highly adaptable combat platform enhanced with autonomous functions, VECTOR augments mission effectiveness by reducing risk to troops, increasing firepower mobility, and offering superior situational awareness.

The military technology company **Threod Systems** specialises in the development and production of fully electric, fixed-wing reconnaissance drones, electro-optical payloads, and launcher systems for attack or target drones. Their most well-known unmanned aerial system, the EOS C VTOL, is a small ISTAR drone weighing only 14.5 kilos, providing its end users with many capabilities typically found in larger unmanned platforms. The latest development adds laser designation capabilities to its arsenal.



Milrem Type-X RCV 7

Photo by Milrem Robotics

Threod's products are used by armed forces and law enforcement agencies in 25 countries, including 7 NATO member states and Ukraine. Both the EOS C VTOL and Threod's UAV (Unmanned Aerial Vehicle) launcher system, CATA, are regularly used by Ukrainian operators in actual combat situations. Threod's CATA is known for its unique design and software, which enables rapid deployment and quick extraction in tactical situations.

Another company gaining attention is **ASAX Innovation**, whose unmanned ground vehicle ASAX H-2 is specifically designed for evacuating wounded personnel from dangerous areas. It is expected to be a game-changer in military medicine. This remotely controlled vehicle enables medical personnel to stay at a safe distance while ensuring rapid medical assistance in critical situations. The vehicle has a payload capacity of 300 kg and can travel 50—100 km on a single refuelling.

ASAX Innovation collaborates with **SkyLab Defence Robotics**, a Ukrainian defence company, to develop UGV radio control systems, as well as with **Maru Defence**, an Estonian company, to create a comprehensive evacuation solution. As part of this partnership, ASAX's unmanned ground vehicle evacuates wounded soldiers to Maru Defence's stabilisation point near the front line, from where they are transported to a hospital.

Electronic warfare systems

Founded in 1995, **Rantelon** is the most renowned developer and manufacturer of specialised electronic warfare equipment in our region. The company is also involved in the development of the Baltic Drone Shield. Rantelon is primarily known for its drone detection and countermeasure systems, which are equipped with an innovative artificial intelligence system capable of detecting drones that would typically remain unnoticed. The system improves the accuracy of drone direction detection and ensures more effective airspace protection. On the battlefield, Rantelon's drone detection system DTS-9058 can detect enemy drones even before they take off. In addition to identifying the direction and presence of UAVs, the DTS-9058 is also capable of locating the remote control, working excellently also in urban environments.

Counter-drone systems

Two companies specialising in automated drone surveillance and countermeasure solutions that have attracted significant international attention are **Marduk Technologies** (founded in 2016) and **DefSecIntel Solutions**.

Named after Marduk, the Babylonian protector god, Marduk Technologies develops systems often described as "operating in the future already today." Specifically, their systems — resembling enormous binoculars — are designed to detect, track and classify the increasingly prevalent next-generation drones, which operate in radio silence and engage in reconnaissance. One of the company's most notable innovations is the Marduk Shark passive electro-optical drone detection and precision targeting system, capable of detecting mini-drones from 2.4—5 km away and tracking them with extreme accuracy. The system won 3rd place in the European Border and Coast Guard Agency (Frontex) innovation competition for detecting low-flying objects (LFO), competing against 21 other companies. Another key product in Marduk Technologies' portfolio is the Marduk Piraya, a counter-drone system designed for surveillance and protection of critical infrastructure and national borders. The company has been actively participating in various EDF projects, and also collaborating with various European defence primes.



Photo by Threod Systems

Threod EOS

Situational awareness systems

In the field of ultra-low-latency situational awareness systems for armoured vehicles and unmanned robots, the Estonian-Croatian startup **Vegvisir** has been making waves. Their augmented reality-based 360-degree systems are designed to enhance the battlefield capabilities of vehicle crews and command centres by providing an unprecedented level of situational awareness, facilitating faster and more informed decision-making. Several defence industries worldwide have already taken an interest in their products: Core, Remote, and Virtual Command Station.

The Core consists of augmented reality goggles that provide armoured vehicle crews with a 360-degree "see-through-hull" capability, offering real-time awareness of the surrounding environment. Remote is designed for monitoring the surroundings of unmanned or semi-autonomous systems, improving situational awareness for remote-controlled and autonomous platforms. Virtual Command Station replaces traditional screens with a virtual display inside augmented reality goggles, allowing battlefield commanders to manage real-time data from multiple sources within a single, comprehensive view, significantly improving coordination among units.

At the beginning of 2025, Vegvisir signed a cooperation agreement with Milrem Robotics to enhance the situational awareness of unmanned vehicles. Their joint objective is to strengthen each other's technological capabilities and ensure seamless integration between Milrem's autonomous ground vehicles and Vegvisir's advanced 360-degree visualisation systems.



Marduk Shark system

Becoming a hub for the smart defence industry

By Maris Hellrand

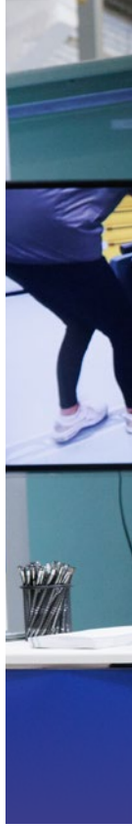


Photo by Raul Mee

The vigorous growth of Estonian defence industry companies has proven that little Estonia can punch above its weight in the field of high-tech defence systems. According to Taavi Veskimägi, chairman of the Council of the Estonian Defence and Aerospace Association (EDIA), Estonia has set the goal of becoming a global innovation hub for the defence industry, where high-tech smart solutions are created at reasonable prices.



Kusti Salm from Frankenburg Technologies and Taavi Veskimägi at the gathering of Estonian defence industry companies in Tallinn

Photo by Andres Kralla

The vision of the Estonian defence industry is nothing less than to shape Estonia into a hub for the smart defence industry. What does this mean? Where did this ambition come from?

Our goal is to fully integrate the Estonian defence industry into the broader European defence ecosystem, embedding Estonian companies into international defence industry value chains. By doing so, we aim to position Estonia as the most attractive jurisdiction for defence industry headquarters, particularly for companies developing disruptive technologies.

Estonia as a smart defence industry hub means that we have set the goal of becoming a global innovation centre for the defence industry, where high-tech smart solutions are created at reasonable prices, and which have an impact on the battlefield and create jobs for the people of Estonia. We are unlikely to ever produce tanks, but we can make them smart. If someone else provides the hardware, we know how to add the intelligence to it.

Our ambitions came about through more than 15 years of systematic development activity. We see that the strength of a small country can only be in innovation and the ability to provide solutions that best meet customer needs. The competitive advantage of our defence industry companies lies in close cooperation with the end customer, understanding the needs of the end customer, and what the product needs to accomplish on the battlefield and how. We must be quick not only in developing new solutions but also in their industrial offering so that customers around the world can trust our companies.

The vigorous growth of Estonian defence industry companies confirms that this direction is correct. With this growth, we have proven that little Estonia can punch above its weight in the field of high-tech defence systems.

How much of the defence industry develops and produces things that are needed in the domestic market, i.e. the Estonian Defence Forces? Or does it make more sense to target exports regardless, and above all, systems that are compatible with NATO and European allies that can compete for major contracts? Are production volumes growing fast enough?

We need both — domestic markets and exports — but neither alone is enough. The Estonian Defence Forces already use a number of our industry's products: situational awareness systems, unmanned platforms for information gathering and logistics, communications solutions, and equipment maintenance and repair.

Although exports account for 70% of turnover, the domestic market plays a fundamental role. Firstly, in establishing a reference — the first question asked when going to foreign markets is this: "is your own defence force using this product?" Secondly, the defence forces are an important partner in product development, providing the opportunity for testing and feedback. Thirdly, as an anchor customer, the state is particularly important for new technologies.

At the same time, the Estonian market is small, so long-term growth can only come from exports. Participation in NATO and EU tenders provides the opportunity to grow, increase production volumes, and access wider markets.

All in all, a strong domestic market provides the certainty and the reference point, which in turn allows successful exports. At the same time, we need export growth to achieve scale and sustainability.

What are the current export markets and their growth potential? There are obviously also geopolitical constraints on exports of defence products, which may change as the situation evolves. How are these taken into account?

Export of the Estonian defence industry comprised 70% of the sector's total turnover, and it has significant growth potential. The main export markets are, naturally, allied countries and, in a changing environment, are increasingly European customers, as Europe's independent defence capabilities are built. An important part of Europe's independent defence capability is, of course, the contribution to the defence capability of Ukraine; today, more than ten Estonian companies have products in daily use in Ukraine.



Photo by Kongsberg

‘The real moment of truth for any defence product comes on the battlefield’

Estonian defence industry companies have worked internationally since their inception due to the limitations of the domestic market, so it is not difficult for our companies to operate flexibly and be where their customer needs them to be. However, our aim is to keep them at least headquartered in Estonia. Strengthening the EU Single Market for defence is essential for this, as is establishing clear legal regulation (or simplifying rules) to allow a defence industry company operating in one member state to access another state’s defence procurements without restrictions.

The European defence industry’s base should be treated EU-wide as part of Europe’s joint defence capability, not on a member-state basis. This approach is fundamental to accelerating the adoption of new, effective defence industry products to quickly increase the force multiplier of European armed forces while reducing the cost of the kill chain and enhancing our rapid European deterrence capability. A European common market for defence products and goods enables the emergence of a capital market in the EU for the defence industry, comparable to that of the US. Given the current market fragmentation, it is difficult for European defence industry companies to demonstrate growth.

How does Estonia define its competitive advantage in this area, both in terms of sales and foreign investment?

Our competitive advantage rests on four pillars. Firstly, understanding the needs of the end customer — a capability, not a product-based value proposition. What is the job that needs to get done? What goals need to be achieved with this technology?

Secondly, the rapid ability to test products with Estonian customers and integrate the Ukrainian battlefield experience into our own value propositions.

Thirdly, our digital DNA — Estonia is known for its e-solutions, which have been successfully applied in the defence industry. As a member of NATO and the EU, our products comply with international standards, which builds trust among our customers.

Fourthly, our innovative spirit and quick adaptability — we are small and flexible, able to respond quickly to changing needs. As **Tormis Saar, Go Craft**’s CEO has aptly pointed out: “Speed of adaptation is our advantage”.

Ultimately, our competitive advantage lies in the shift from standard weaponry to smart defence — we are changing the battlefield not with more weapons, but with smarter systems that enable better decisions, faster reactions, and more effective action. We are making combat more effective and achieving more with the same capabilities.

How do foreign investors see Estonia in this sector? What is the overall share of foreign investors in the defence industry? How are they affected by the war in Ukraine and what arguments do you use to convince them to invest here?

The attitude of foreign investors towards the Estonian defence industry has changed significantly in recent years. Estonia is a country in Europe that offers good conditions for the defence industry. We offer a strong ecosystem where R&D, production, testing, and export are coordinated. The successful launch of the planned defence industrial park is critical, especially for the scaling-up of ammunition, explosives, and weapon systems production.

Thousands of people with defence technology skills in Estonia will ensure successful implementation of the investments. Our experience in Ukraine allows products to be tested in real conditions and be developed rapidly, accelerating the return on investment.

Ukraine — are we givers or takers? Many Estonian manufacturers are conducting "battlefield trials" in Ukraine. How does this affect their products, processes, and sales?

In the defence of Ukraine, we are, on the one hand, certainly the givers, but on the other hand, we are also the recipients of very important experience and knowledge. More than a dozen Estonian companies are currently working in Ukraine, providing solutions ranging from sensors and surveillance equipment to unmanned platforms, anti-drone systems, field hospitals, and training. We support Ukraine in their fight for freedom.

However, the defence of Ukraine certainly offers invaluable experience for our companies. The battlefield in Ukraine will be a test case to see which technologies really work — the real moment of truth for any defence product comes on the battlefield.

Technological development in Ukraine is very fast — what would take 10 years in peacetime is done much faster. Impractical solutions are immediately discarded, and what remains is what gets the job done.

Ukraine's experience has spurred the emergence of new companies — **Asax Innovation**, for example, was set up in response to a Ukrainian partner unit's need for a different way of evacuating wounded combatants.

In the international market there are now two key questions: is your own defence force using the product, and has it been used in Ukraine? This experience will give our companies a strong competitive advantage for the next 3 to 5 years.

The impact has been noticeable on several levels. Products have become more functional, more reliable, and more user-friendly. For example, the design of **Semetron**'s field hospitals has been radically changed thanks to the Ukrainian experience, with better materials and more ergonomic solutions.

Processes have sped up, and production has become more flexible. For example, in the use of drones, we have learned that the whole process has to fit into 12 minutes (4 minutes to set up, 4 minutes to launch, and 4 minutes to assemble) to avoid countermeasures.

We have proposed the creation of a public financing envelope (for example, €25 million), which would allow us to send Estonian industry products to Ukraine with our own money. In this way, we would help Ukraine, and at the same time, we would strengthen our own defence capabilities through the development of our defence industry.

Estonia's defence companies aim for €1 billion turnover — in what timeframe? What is the benchmark of success in the next 5 years?

The EDIA has set a target to reach a total turnover of €2 billion in the defence sector by 2030, of which €1.4 billion would come from exports and the scaling up of companies from startups to global players. It is important that more companies with a turnover above 50 to 100 million euros emerge from Estonia.

With a turnover of around €500 million in 2024, this means a fourfold increase over the next 7 years. In the rapidly changing environment of the last few months, this is perhaps not ambitious enough. A strong defence industry is not only vital for national security but also drives economic growth by creating high-value jobs. Countries facing similar geopolitical realities, such as South Korea and Israel, have demonstrated this successfully. However, achieving this requires a comprehensive ecosystem promoted by the government.

You have said that your focus is on the defence industry and the clean economy. How do they fit together?

There are many technologies and products with a low environmental footprint that meet the capability needs of the Estonian Defence Forces, giving these products a natural competitive advantage to do the same job better and more efficiently. These include, for example, hydrogen, water treatment and battery technologies, energy efficiency solutions, and smart microgrids. We need to focus on those areas in which low environmental footprint technologies have a natural competitive advantage. In particular, I have tried to invest in companies that cross clean economy and defence, such as **PowerUP Fuel Cells**, **Spacedrip**, **GaltTec**, **GSCAN** amongst others.

I believe that cleantech is essential to strengthen Europe's strategic autonomy to provide more efficient energy solutions based on local primary fuels and to make better use of sustainable materials and material recovery. I therefore see the need to integrate a resilience requirement into the EU ESG taxonomy as part of the social criteria that companies set to ensure their ability to cope with civilian and military crises. I believe ESG social criteria should demand the demonstration of resilience capacity in economic activities of companies and financial institutions.

Photo by Threod Systems



Threod Systems drone launch system CATA



Photo by Bolt

Markus Villig mobilising startups for Europe's defence

By Ann-Marii Nergi

Markus Villig is best known as the founder of the unicorn startup Bolt, but over the past year he has also become an important advocate for the need to develop the defence industry in Estonia and Europe. Together with another prominent Estonian startupper, Ragnar Sass, they have created a monthly event – Estonian Defence Meetup – to bring together those involved and interested in the defence industry and to give a startup-like boost to its development.

At the same time, Bolt's founder confirms that he will remain associated with the defence industry more as a representative, explainer, and potential investor, and that he will continue his day-to-day work with mobility company development.



Estonian Defence Meetups, organised by the Estonian Founders Society, bring together those involved and interested in the defence industry to give a startup-like boost to its development

Markus Villig, more than a year ago, in February 2024, you launched the first Estonian Defence Meetup. Do you see that this initiative — to bring a startup mindset to the defence industry — has proven itself? We have heard from participants that the Estonian Defence Tech Meetup in Tallinn has grown into a mini conference.

To date, there have been more than 10 such defence tech meetups already. It has been a good start, and the meetups are insightful and bring together quite a large group of people on a monthly basis.

I started in the defence sector a year and a half ago with no previous experience of it, as I work in a completely different sector. But the full-scale war in Ukraine had been going on for 2 years by then, and I expected that by that time many new defence companies would have sprung up in Estonia and across Europe as a reaction to the war, giving us the capacity to defend ourselves. But when I realised that things weren't moving fast enough, I tried to think of what could be done to speed things up and activate this. I met a lot of people, from those in the Estonian Defence Forces to people in the European technology sector, and tried to understand the current situation and the challenges.

Firstly, I delved into how much Estonia is investing in defence; secondly, how this budget is being spent and whether it could be made more efficient; and thirdly, the aspect of how to engage with the private sector to bring more innovation into the defence sector and generally to get startups and investors involved. So I met with, among others, both the previous and the current prime ministers of Estonia, reassuring them that there is business support for defence investment, and we understand that in times of crisis, spending also needs to be increased. This is also evident more broadly in opinion polls in Estonia, which show that support for increasing defence spending is high. It is always worth reminding politicians of this, and it is something that needs doing across Europe. Personally, I have discussed the importance of this issue over the past year with, for example, French President Macron, who confirmed that defence spending must be increased and that Europe must be more independent in this. A couple of months ago, I spoke to UK Prime Minister Keir Starmer about this. Will these messages translate into real action, into spending and budgets, into boosting production? I would very much like to see that happening far more quickly here in Estonia.

On the use of defence funds, the biggest question mark for me was that the vast majority of equipment purchases go overseas — we buy primarily from US and European manufacturers, but there is no economic value added locally. This can be remedied by concrete actions — for example, the Estonian state has already set up a €100 million defence technology fund to invest startup capital in Estonian companies, and hopefully, within a couple of years, they will be able to get production up and running. Through such investments, the money will come back into the local economy.

Secondly, innovation — defence budgets of countries around the world, in general, are geared towards very traditional means, and innovation is usually left with nothing. That's a big issue, one that we've been persuading different parties, like the Government and the Ministry of Defence, to put more money into. This would enable testing of experimental new technologies in order to more quickly build real capabilities that the defence forces can use. Today, procurement is very slow, buying what is already known. In fact, it would be worth keeping a very close eye on how and with what means warfare is actually being conducted on the front in Ukraine, and how much completely new technology is being used there.

And thirdly, we come to these community meetups. We focus on how to attract more attention to the field and how to explain to investors and businesses that defence is an important field, not only for the preservation of our country, but also that it is commercially potentially attractive. I came up with the idea, and together with **Ragnar Sass**, we started to run these meetups. Ragnar has been running it successfully, and these meetings are super popular, not only in Estonia but also in Ukraine, Poland, Finland, etc. All the events are sold out, and the interest is really high.

How have these challenges been addressed so far, and how do you evaluate the progress over the last year? As you know, until recently, investing in the defence industry was completely out and taboo.

The private sector has moved very fast, both in Estonia and in Europe. Indeed, a few years ago, the defence industry was roughly in the same category in the minds of investors as tobacco or gambling, something to be bypassed. Today, because the security situation has changed globally, its importance is understood. In Estonia, I would say, there is a consensus on this.



Ragnar Sass

Photo by Darkstar



Kadri Tammai,
Regional Director NATO DIANA

In recent decades, the pace of technological innovation has never been as rapid — or as necessary — as it is today. While cutting-edge commercial technologies have flourished in the civilian sector, many of these solutions hold untapped potential for defence applications. However, startups and innovators often prioritise commercial markets due to lower entry barriers and less complex regulatory environments.

Recognising this gap, NATO launched the Defence Innovation Accelerator for the North Atlantic (DIANA), a dedicated agency that scouts, supports, and accelerates disruptive technologies for defence and security. With operational centres in London, Halifax (Canada), and Tallinn, DIANA ensures a strong geographic presence across the Alliance. Each hub taps into the unique strengths and core competencies of its host nation: London leverages the UK's deep expertise in advanced defence technologies and security innovation, Halifax builds on Canada's leadership in ocean tech, supply and value chain, and artificial intelligence, and Tallinn capitalises on Estonia's globally recognised strengths in cybersecurity, digital resilience, and emerging defence tech. From Tallinn, we also lead DIANA's acceleration programme across 32 nations, fostering collaboration between innovators, industry, and defence stakeholders.

Each year, DIANA identifies key technological capability gaps and launches challenge calls, inviting startups and researchers to develop solutions that push defence and dual-use technologies forward. Last year, we launched five challenges and received over 2600 applications — demonstrating the immense interest and potential in this field. Out of these, only 74 companies were selected for the programme, making DIANA one of the most competitive defence and dual-use innovation accelerators in the world. Once accepted, participants join an elite group of top-tier companies shaping the future of security and defence. Through expert mentorship, funding, and access to NATO's extensive network, DIANA helps innovators scale their solutions, bridging the gap between cutting-edge discoveries and real-world deployment.

Our core mission is clear: to equip NATO and its Allies with groundbreaking technologies that enhance security, resilience, and defence capabilities — ultimately protecting over one billion citizens.

In recent years, the defence innovation landscape has undergone a profound transformation. Across Europe and beyond, we are witnessing an unprecedented surge of interest from founders and innovation communities eager to contribute to defence and security. This shift is particularly pronounced in nations with a heightened sense of urgency, yet it reflects a broader, global trend — one that is reshaping how we approach security challenges in the 21st century.

DIANA stands at the forefront of this movement, ensuring that the best and brightest technologies are not only developed but also successfully integrated into the future of defence and security.

Photo by Eiko Lainjärv



NATO DIANA Estonian Accelerator 2025 batch

Interest in the sector is growing very fast. I myself have received dozens of offers for fundraising, and I know dozens of people who have left big startups to start their own defence companies. Many people from the startup sector have also joined defence companies to contribute in this way.

NATO's DIANA and other defence industry accelerators have also been launched, which should bring a startup mindset to the sector. How do you assess their success or the potential for collaboration with you?

Potentially they have a very good role to play. They provide the funding, the credibility, and the contacts to help startups get their first customers. In practice, unfortunately, these accelerators have been relatively slow and a great many of them are not creating the things that are needed. Dual-use technology is not necessarily the innovation that is needed in defence. It is the real tools of warfare that need support — we need drones, missiles, or new ways of producing weapons. There is an acute need to develop air defences (which are already being developed by Frankenburg Technologies) and attack drones (which are being developed by defence company Helsing, for example). But we will certainly find opportunities for cooperation, as the idea behind meetups is to bring together people in the field from across the region.

You're best known as the founder and CEO of the globally successful ride-sharing platform Bolt, but perhaps you're also planning to enter the defence industry with a new startup?

I'm helping to raise public awareness. But on a day-to-day basis I focus on Bolt. I help raise public awareness, explain to politicians why it's important, attract new investors and startups to the sector, and also invest and advise myself. It's a different role to building a startup myself.



Kristjan-Mart Piirsalu,
SmartCap investment manager

Estonia launched a €100 million defence fund

The €100 million fund for the emerging defence tech sector, launched by the Estonian Ministry of Economic Affairs and Communications, is managed by the national fund manager SmartCap.

Its primary goal is to develop Estonia's defence industry by providing equity investments to companies developing innovative technological solutions that address the growing defence and security needs across Europe. To achieve this, the fund will invest up to €10 million per company in companies producing dual-use or military technologies and up to €20 million per fund in funds that invest in such companies.

Since the fund was only launched at the end of December, it is still too soon to provide details on the first investments. However, we are actively working on a strong and growing pipeline of potential opportunities. It's important to note that the investment process typically takes about 6 months from the initial contact.

SmartCap evaluates investment opportunities based on certain parameters, including strategic relevance to Estonia's and NATO's defence and security sector, market potential, including export capacity and growth opportunities, and the expertise and credibility of the founding team.

Investing alongside private investors not only enhances the attractiveness of the defence sector to private capital through risk-sharing mechanisms but also sends a strong signal that defence technology development, industry growth, and export capacity are strategically important for Estonia. While the requirement for private sector co-investment may narrow the selection pool, it also helps ensure a higher standard of quality in the companies chosen for investment.

NAFO expansion remains non-negotiable

By Adam Ranga

The Estonian startup community, operating under a brand of 'shitposting' cartoon dogs, continues to serve as the largest international private donor to the Armed Forces of Ukraine.

There's a lot to unpack in that sentence.

If you've been sensible enough not to have spent much of the last few years on Twitter (or 'X' as it's now supposed to be known) then you might not be familiar with the NAFO fellas and their "brigade" based in Estonia.

In a nutshell, NAFO is a movement dedicated to Ukrainian victory that has been built online around memes involving a breed of dogs known as **shiba inu**, which has somehow proven effective at disrupting Russian propaganda while raising many millions for the defence of Ukraine.

Here's where things get particularly topsy-turvy. Volunteers in Estonia then created their own offline NAFO brigade in order to build on the movement's momentum and more effectively source and deliver supplies to where they are most needed. Yes, the Estonians *undigitalised* something for a change.

NAFO volunteers have bought hundreds of (mostly high-end SUV) trucks, painted them in some unconventional camouflage, stuffed them with vital supplies including drones, generators, and anti-jamming systems, and driven them to defenders on the frontlines in Ukraine.

These privately financed convoys have departed regularly from Tallinn ever since Russia began its full-scale war of aggression against Ukraine. Three years later, their efforts are only intensifying with more volunteers, better coordination, and a deeper understanding what Ukraine needs to defeat Russia's aggression.

Photo by NAFO Convoy

Photo by Kasper Kase



Anna-Liisa Palatu (on the right) and her team of Woola plan to keep fundraising until Ukraine wins the war and Russia is conclusively defeated

The volunteers in Estonia who make this possible are a wide cross section of the startup sector, from IT specialists and freelancers to founders and CEOs of billion-dollar startups like **Pipedrive** and **Bolt**, working alongside an international network of like-minded activists.

"I plan to keep fundraising until Ukraine wins the war and Russia is conclusively defeated," explains NAFO volunteer **Anna-Liisa Palatu**.

In her day job, Anna-Liisa is the founder and CEO of **Woola**, an Estonian company that turns waste wool into sustainable packaging, eliminating plastic wrap. It's won design awards and is currently on display at the United Nations headquarters in New York as part of an exhibition on the best examples of circular economy.

Despite the busy demands of startup life, Anna-Lisa uses her spare time to drive medical evacuation trucks into Ukraine, camouflaged in shiba inu dog patterns and with "One truck closer to victory" emblazoned across the side.

Record scratch. Freeze frame. You're probably wondering how she ended up in this situation. (It's a meme reference).

What NAFO doing?

The story of NAFO all started with a Polish artist named Kamil. In the early days of Russia's full-scale war against Ukraine, Kamil began posting memes that featured shiba inu mocking Russian invaders. For those not terminally online, shiba inu have long been a favourite dog breed for memes ever since a photo of one reclining on a couch went viral in the early 2010s. Alongside his memes, Kamil encouraged people to donate to Ukraine's Georgian Legion. It proved to be a surprisingly effective fundraising tactic. People even began asking if they could get their own custom shiba inu "fella" to use as a profile photo and show their support.

It began a snowball effect. Volunteers formed a "fella forgery" to keep creating these custom memes around the clock to thank each donor, which only further increased demand as the images proliferated across the web. "You're like NATO", one person tweeted. "NAFO", Kamil suggested in response, "The North Atlantic *Fellas* Organisation".

When not donating, a lot of fellas started engaging Russian propagandists, filling up their replies with mocking comments and memes.

Autocratic regimes have long invested in troll factories that aim to undermine free societies with confusion and division. The fellas were turning the tables by deploying their own brand of internet humour. None of Russia's usual infowar tactics worked against them as the fellas would turn any interaction into yet more memes, particularly enjoying accusations that they were created by the CIA.

"You pronounced this nonsense," one exasperated senior Russian diplomat tweeted at a cartoon dog, instantly making the phrase a new NAFO slogan, alongside other classics like "NAFO expansion is non-negotiable" and "What airdefence doing?" The "soup-centric" NAFO community has developed such a rich variety of lingo and in-jokes that trying to explain all these would take up a whole nother article.

By using engagement with Russian propagandists as entertainment, the fellas could then use their growing influence to elevate the voices of Ukrainians and other long ignored perspectives of people who have experienced Russian imperialism, including in Estonia and the Baltic countries.

With the help of the fellas, more people around the world were understanding Russia's war within this context and learning, often for the first time, about topics ranging from the Molotov-Ribbentrop Pact to the Singing Revolution. They were better understanding both the horror of occupation and the fact it can be defeated.



Ragnar Sass with the flag of Code 9.2 — the secretive Ukrainian drone unit

Photos by NAFO Convoy

NAFO was upturning a lot of thinking (and criticism) of existing counter disinformation approaches across the EU. Critics sometimes say these efforts aren't joined up enough as there's too many different groups doing overlapping work. This criticism effectively calls for a more unified, top-down approach. But NAFO is effective exactly because it involves so many different people doing their own thing in their own way and reaching across different online communities in a way that's genuinely entertaining, not just lecturing.

No government could create a movement like NAFO if it tried, but democracies don't always need a top-down approach. Our strength comes from our civic society and our diversity of voices. Everyone has a role in countering disinformation and safeguarding freedoms, even those shitposting as cartoon dogs. "NAFO is a living example of how to disarm Russian disinformation with humour, intelligence and enthusiasm," explained **Kaja Kallas**, then Estonian Prime Minister and now EU foreign policy chief while addressing a NAFO summit in Lithuania. "Behind every Fella is a real person who believes in Ukraine's victory."

Taking NAFO offline

When the NAFO movement first began growing online, Estonian civic society was already working overtime in a myriad of ways to support Ukraine. Among them, Anna-Liisa and her whole team of Woola employees were searching for ever more creative ways to fundraise and deliver supplies. They first raised funds to buy a medical evacuation truck and then realised that they could also use their waste wool to make mattresses to deliver with it. To get to Ukraine, she drove in convoy with other volunteers based at Tallinn's Lift99 coworking space.

Lift99, created by Pipedrive cofounder **Ragnar Sass**, has launched a vast number of successful companies and expanded to Kyiv in 2019. At the outbreak of Russia's full-scale war, the Tallinn and Kyiv hubs immediately transformed into a supply network. Entrepreneurs in Estonia vowed to keep donating to Ukraine until victory and to keep investing in Ukraine beyond that.

The Lift99 community harnessed its international network and its in-house skills to build an online platform at **Help99.co** where anyone can easily donate online. They also have the advantage of being closely connected to the Ukrainian Armed Forces and volunteers across Ukraine, and the volunteers involved are donating their own money and are well known in the startup world globally. This all provides significant assurance to international donors that every cent will be spent wisely on supplies, in contrast to bigger aid organisations often criticised for slow distribution, admin costs, and sometimes limited understanding of realities on the ground.



Over time, other efforts to fundraise and supply Ukraine from across Estonia — such as Adopt A Drone — began coalescing through Help99. "The Help99 volunteers first delivered drones for us, but then it made sense to fully merge," explains **Arnaud Castaignet** who runs the Adopt A Drone initiative and also serves as VP at **Skeleton Technologies**, which has also makes significant contributions to support Ukraine. "Help99 eliminated the admin of raising funds so we could focus on getting more donations to where they are most needed."

As the fast-growing group of volunteers shared NAFO memes between themselves on supply missions, the online and offline activists also merged. It meant NAFO fundraising efforts could be directed toward a credible and effective network able to deliver their donations. NAFO's **69th Sniffing Brigade** was born.

The convoys are no easy ride. Volunteers take shifts driving to reach Ukraine in around 24 hours then endure the mundane hassle of cross-border paperwork before facing the risks of Russian terror attacks that Ukrainians endure daily. Getting there is the easy bit. After dropping off the vehicle with its supplies, volunteers must then return using whatever public transport is available at the time, although Ukrainians have done an incredible job keeping it functioning as smoothly as possible amid a war to annihilate them.

Many of the factors that made NAFO effective online also proved to be effective offline. In place of memes, the NAFO brigade posts (in the old-fashioned sense) patches to donors.

As diverse influencers and groups can take responsibility for individual fundraising campaigns, including by creatively designing the patches and choosing the decals on the trucks, this enables the NAFO brigade to reach across different countries and different niche communities. There are patches for NAFO volunteers representing Canada, France, the UK, even the Faroe Islands. E-residents of Estonia also have their own patch.

Maria Magdaleena Lamp works in marketing at the Estonian Investment Agency and, in her spare time, is a dedicated game master and influencer ("nano-influencer," she insists) in the Dungeons and Dragons community. She's now launched a NAFO fundraising campaign for the global D&D community to join her in supporting Ukraine.

"Beyond anything, I love this game because it allows us to imagine a world where good can ultimately triumph over evil," says Maria. "But that doesn't just happen on its own. It's up to us to act, and to inspire others to act."

When it is pointed out to Maria that NAFO members already refer to Russian invaders as orcs, including on the decals of many NAFO trucks, she is not so pleased. Maria insists this is deeply unfair to orcs and won't be included on her truck. Apparently, not all orcs are inherently evil in the D&D universe. #NotAllOrcs.

One thing all NAFO volunteers do agree on though is that the real heroes are the Ukrainians.

"Ukrainians are always thanking us for continuing these supplies but it is us who should be thanking them," says Anna-Liisa after returning from her fifth convoy to Ukraine. "Fundraising is very easy compared to the unimaginable physical and mental battles that Ukrainian soldiers, and wider Ukrainian society, is going through while defending our freedom too."

The team at Woola has so far raised more than €160 000 and donated 8 medical evacuation trucks, as well as 500 mattresses and other supplies. For their next campaign, Anna-Liisa is auctioning custom artwork and has designed a patch highlighting Ukraine's "Real Statue of Liberty".

In total, the NAFO community in Estonia has raised more than €13 million and delivered more than 600 trucks with around 2000 drones and more than 600 anti-drone jammers. By the time you read this, these numbers will be higher and rising still.

The nature of the supplies is constantly evolving. Instead of Chinese-made DJI drones, for example, donations now support the production of Wild Hornet drones by volunteers inside Ukraine. They're lower cost, more secure, more effective, and help support the rise of local defence tech production so crucial for long term regional security.

The legacy of these convoys will be vast. Some of the key volunteers are joining forces in other ways. Ragnar Sass now also leads **Darkstar**, a coalition of entrepreneurs, investors, tech and military experts seeking to develop a next generation defence industry to rearm Europe.

For now, wherever in the world you are reading this article, you can visit Help99.co and get involved with NAFO to help bring Ukraine one truck closer to defeating Russia's aggression.

At the time of writing, the NAFO community is still no closer to an agreement on how to pronounce NAFO.



Photo by Kasper Kase

Frankenburg Technologies:

Estonia's rising force in European and NATO defence

By Ronald Liive



Photo by Raul Mee

Kusti Salm

Photo by Maurice Buttermann



Frankenburg Technologies met with the Prime Minister of Estonia and introduced their product: the Mark 1 counter-drone missile — an affordable, mass-produced solution for short-range aerial threats. From left: CEO Kusti Salm, PM Kristen Michal, co-founder Taavi Madiberk, and board member Veiko-Vello Palm

In Estonia, a bold ambition is taking shape — one that could significantly alter the balance of defence capabilities across the continent. **Frankenburg Technologies**, a defence tech startup headquartered in Estonia, is rapidly becoming one of Europe's most closely watched players in the evolving security landscape.

Led by former Estonian Ministry of Defence Permanent Secretary **Kusti Salm**, Frankenburg is on a mission: to produce air defence missile systems at a fraction of current costs and on an unprecedented scale. "We aim to produce missiles 10 times cheaper and 100 times more than what's currently possible," emphasises Salm. And they're not just dreaming it — they're building it.

From strategic vision to battlefield necessity

The urgency behind Frankenburg's mission is driven by brutal real-world experience. Since the start of the full-scale war in Ukraine, the number one request from Kyiv has been clear: air defence. From Iranian-made Shahed drones to loitering munitions, modern conflicts are being transformed by swarms of low-cost aerial threats.

Frankenburg's core mission responds directly to the lessons learned in Ukraine — there is an urgent need for scalable, agile, and cost-effective air defence. Traditional missile systems — costly, complex, and slow to produce — were never designed to meet this challenge.

"There simply aren't enough missiles to deal with the sheer number of threats," Salm explains. "It's not a matter of will. It's a matter of economics and scale."

What sets Frankenburg apart is not just its goals, but its philosophy. "We're not here to 'support' or 'contribute'. We are building the things that will help win a war," Salm states flatly.

Their emphasis is on defeating drone threats that are growing exponentially. "We're talking about moving from tens of thousands of targets to millions. That's the scale of growth we're addressing."

A team forged in experience

Frankenburg's leadership reads like a who's who of Estonian defence. Alongside Salm, Maj. Gen. (Ret.) **Veiko-Vello Palm** and Gen. (Ret.) **Martin Herem**, former Commander of the Estonian Defence Forces, form part of the core team. This brings not only credibility but also intimate, operational-level knowledge of how modern warfare is evolving — and what militaries urgently need.

It's not just military brass. The company has also attracted global engineering talent, including former executives from leading European defence companies. One standout is **Andreas Bappert**, who joined Frankenburg after leading the Medium and Long-Range Air Defence Systems division at Diehl Defence in Germany. With over 20 years of experience in missile technology, Bappert brings deep technical expertise and programme leadership from some of Europe's most advanced weapons development projects.

Another key figure is **Andrejs Pukitis**, the company's CTO, known in Baltic aerospace circles as both a prolific rocket builder and a dedicated educator. He has built dozens of rockets, teaches robotics and rocketry at Riga Technical University and the Latvian Academy of Arts, and has been instrumental in making Frankenburg's missile designs not only effective but scalable and producible under field conditions.



Photo by Karolis Žemaitis

‘We’re not here to “support” or “contribute”. We are building the things that will help win a war’

Kusti Salm with the EU Commissioner for Defence and Space, Andrius Kubilius in March, 2025

Frankenburg also benefits from the experience of **Reinis Veips**, former CTO at Atlas Aerospace, who now leads engineering operations. With over 15 years of experience building dual-use aviation systems, Veips has been central in translating Frankenburg’s vision into manufacturable hardware.

As Salm notes, “We hire from across Europe, but our roots remain deeply Baltic.”

This exceptional team has helped the company attract a number of high-profile backers. Among its notable investors is **Taavi Madiberk**, CEO of Skeleton Technologies and a member of the European Innovation Council board. He brings a unique perspective at the intersection of deep tech, energy systems, and strategic resilience. The supervisory board also includes **Kuldar Väärsi**, founder and CEO of Milrem Robotics, Europe’s leading developer of unmanned ground vehicles, and **Marko Virkebau**, CEO of Stargate Hydrogen, a pioneer in green hydrogen infrastructure.

These investors are more than financiers — they’re strategic allies with hands-on knowledge of scaling frontier technologies in complex geopolitical contexts. Together with the leadership team, they are positioning Frankenburg not just as a startup but as a transformative force in European defence.

The Mark 1: simplicity meets lethality

At the centre of the company’s efforts is the **Mark 1**: a short-range missile system designed specifically to counter drones and other low-flying targets. It travels near the speed of sound, powered by a rocket motor and guided by smart targeting systems that use affordable, off-the-shelf components.

“The problem is simple: there are too many drones and too few missiles. Current systems are too expensive and slow to build. Our answer is to radically simplify the missile using widely available, off-the-shelf components,” Salm says.

Frankenburg’s rocket does not aim to intercept ballistic missiles or high-altitude threats; its purpose is to neutralise the slow, low-cost threats that are overwhelming modern battlefields.

“We’re building against Shahed drones and other low-end threats — not because we can’t go higher, but because this is where the gap is. We don’t need gold-plated missiles to take out inexpensive drones. We need something fast, accurate, and affordable — and scalable,” Salm explains.

Unlike traditional defence firms that guard their technologies as if in vaults, Frankenburg embraces openness and modularity. Their approach is deliberately modular and scalable. By using components similar to those found in smartphones — while strictly avoiding any from adversarial nations — Frankenburg ensures both supply chain resilience and affordability.

Made in the Baltics, ready for Europe

Though technically still a startup, Frankenburg operates with the urgency and focus of a company born in crisis. In just months, its valuation tripled to €150 million, and its manufacturing ambitions grew from thousands to hundreds of thousands — even millions — of missiles per year.

“The threats are real, the timeline is short, and we don’t have the luxury of waiting. If we’re going to stop the next wave of aggression, we need to act now,” Salm says.

This urgency extends to how they think about production. One of the company's core design principles is "assemble anywhere". The idea is simple: systems must be easy enough to produce close to the front lines, even by workers with minimal training.

While Estonia remains the heart of the company, Frankenburg sees itself as a European company. "We don't hide our Estonian roots," Salm insists. "But we're here to solve Europe's security problems."

The company has legal entities and employees in all three Baltic states. A significant part of its engineering takes place in Riga, Latvia, where the government is fully onboard. "Latvia has shown remarkable vision and willingness to take calculated risks. They're not just trialling the missiles, they're committing to them," Salm says, referencing a large-scale pilot deal with the Latvian Ministry of Defence.

In parallel, Frankenburg is expanding into the UK, establishing its western European headquarters in London and creating more than 50 jobs. This move reflects both strategic alignment with the UK's defence ambitions and a desire to become embedded within Europe's wider industrial ecosystem.

"We want to produce close to the customer. That's part of making it scalable. The assembly process must be so simple that local personnel with basic training can do it." This is a core part of Frankenburg's design philosophy: make it cheap, make it simple, make it everywhere.

The Ukrainian test and the next chapter

Frankenburg has ambitious plans for 2025. Among them is the field testing of the Mark 1 system in Ukraine. These trials will provide real-time battlefield data and demonstrate the system's operational effectiveness in the most demanding conditions. "It's one thing to show a missile works on paper. It's another to prove it on a battlefield," Salm says.

Salm repeatedly emphasises during the interview that "the threats are real, the window is small, and the opportunity to make a difference is now." For him, seeing the company's valuation triple within just a few months is not merely about money — it's about mission. "We're building something that helps protect free societies. This isn't just about returns. It's about responsibility."

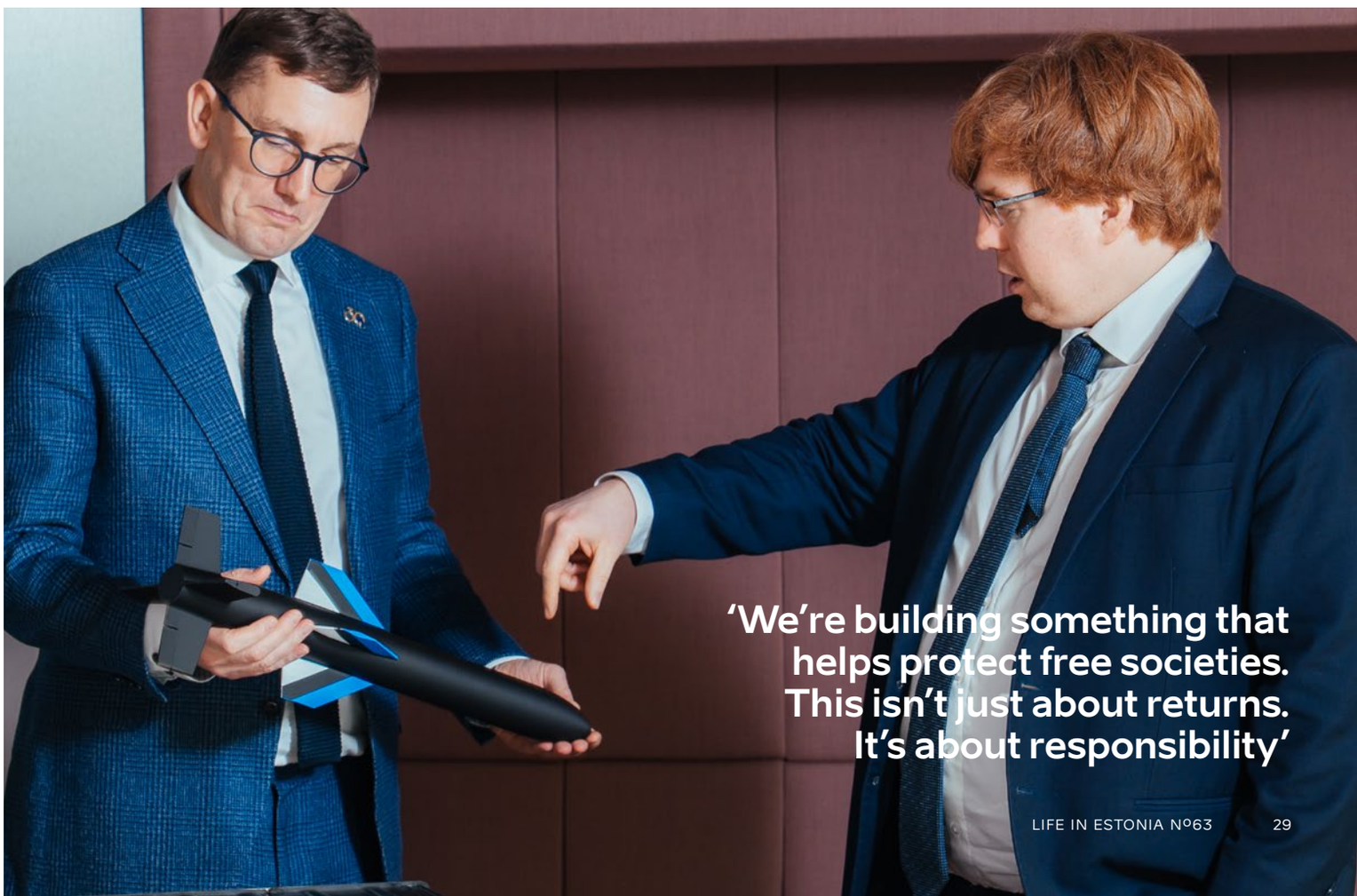
The bigger picture: a Baltic South Korea?

Frankenburg's story is not just about missiles — it's about a shift in mindset. For decades, Europe relied on slow procurement cycles and a handful of large contractors. But the nature of war has changed. Speed, scale, and resilience now matter more than ever.

In wrapping up the interview, Salm makes a striking comparison to countries like Israel and South Korea — nations that face existential threats but have built robust, independent defence industries. "Israel and South Korea face existential threats, yet nobody questions investing or travelling there. Why? Because they act. They take responsibility for their defence. We need that same mindset in Europe."

Frankenburg wants to be a catalyst in that transformation, proving that small countries can lead, that affordability doesn't mean inferiority, and that technology can be a tool of both security and sovereignty. Frankenburg, then, is not just a startup — it's a statement. A declaration that small nations can lead big changes, and a reminder that Europe's future security might just depend on a handful of engineers, veterans, and visionaries working late nights in Tallinn, Riga, and elsewhere.

Photo by Maurice Buttermann



'We're building something that helps protect free societies. This isn't just about returns. It's about responsibility'



Photo by Risto Štukert / DefSecIntel Solutions

DefSecIntel Solutions: Estonia's vanguard in AI-driven defence technology

By Ronald Liive

Estonia, a nation celebrated for its digital prowess and a leading position in the startup sector, is rapidly emerging as a significant force in the defence technology sector.

DefSecIntel Solutions is a key player in this emerging sector. The company has a clear and ambitious vision: to pioneer the development and deployment of AI-powered solutions for surveillance, drone countermeasures, and autonomous maritime operations. A significant portion of the company's advanced solutions is currently geared towards export markets.

Photo by DefSecIntel Solutions



Jaanus Tamm

DefSecIntel Solutions aims to play a crucial role in protecting the external borders of the European Union and NATO. The company's innovative approach and rapid growth have garnered recognition both within Estonia and internationally. They have been acknowledged for their contributions to the technology sector and for their innovative solutions.

"Our main focus is AI — everything from AI-equipped surveillance solutions, drone detection, and counter-drone solutions," explains CEO **Jaanus Tamm**, underscoring the company's specialisation in cutting-edge, AI-driven systems, designed to enhance situational awareness and operational effectiveness.

In 2024, DefSecIntel won two major titles at the Estonian Startup Awards, affirming its position as one of the country's most innovative technology companies. The company was also recognised as the Top Innovator at the Estonian Company of the Year Awards, in addition to placing among the Top 3 exporters and being named the second-most competitive industrial and energy company. At the individual level, CEO Jaanus Tamm was honoured with the prestigious title of EY Entrepreneur of the Year 2024.

The offerings of DefSecIntel are comprehensive, encompassing the development of both advanced software and robust hardware, and the integration of complete end-to-end defence and security solutions. Tamm highlights the company's capacity to provide integrated systems that address the multifaceted needs of modern defence and security. A cornerstone of their surveillance solutions involves the strategic application of drone technology. DefSecIntel, whose name comes from the words defence, security, and intelligence, not only incorporates drones into its surveillance systems for enhanced observation and data collection, but also develops interceptor drones as part of its proprietary EIRSHIELD system — a multi-layered counter-UAS (C-UAS) or ultra-short-range air defence solution, designed for the effective detection, counteraction, and neutralisation of hostile drones.

AI: the engine of innovation

Artificial intelligence (AI) is fundamental to DefSecIntel's technological framework, driving the capabilities of their systems and providing a crucial edge in complex operational environments. The company's command centre software features an AI assistant designed to augment decision-making processes. This is particularly vital for efficiently processing and analysing the vast volumes of data inherent in modern defence and security operations.

DefSecIntel recognises that for end-users such as border guards, who contend with a huge volume of data from diverse sensors, AI plays a critical role in streamlining information flow and highlighting critical events that demand immediate attention.

Their surveillance solutions feature the "Mobile Surveillance Platform", often integrated with drones for enhanced situational awareness, and are controlled by the "Command Centre with AI" software. The drone detection and counter-drone solutions include the "EIRSHIELD" system, designed to detect, track, and neutralise hostile drones, and employing "interceptor drones" for this purpose.

Their AI capabilities extend to a range of critical functions, including the identification of potential threats within visual data and the analysis

of radar information to accurately differentiate between drones and other objects, such as birds. In surveillance systems, if a camera detects an anomaly, drones can be automatically deployed to investigate and verify the situation, providing human operators with real-time situational awareness to facilitate informed decision-making.

"If the camera detects something, then the drones fly out and verify what it is," Tamm explains. While AI delivers crucial analysis and recommendations, the ultimate decision to deploy a drone for verification is reserved for a human operator, ensuring that human oversight remains a key component of the system's operational protocol.

Integrated solutions and supply chain integrity

A key differentiator for DefSecIntel is its unwavering commitment to providing complete, integrated solutions that address the full spectrum of client needs. "We offer a complete solution," Tamm states, underscoring the importance of delivering not just individual components but comprehensive systems that operate seamlessly, eliminating the complexities associated with integrating disparate technologies.

This "one-stop-shop" approach is highly valued by clients, particularly in critical scenarios where time is of the essence and seamless integration is paramount for effective response. DefSecIntel has also prioritised the integrity of its supply chain, a factor of increasing importance in the current geopolitical climate.

According to Tamm, they have reviewed the entire supply chain and ensured that all components are strategically sourced from within Europe and so-called friendly countries. This is done to mitigate potential risks and ensure the security and reliability of its products.

Expanding capabilities: unmanned surface vessels

Despite all the success, DefSecIntel does not simply rest on its laurels — the company is actively pushing the boundaries of innovation in autonomous maritime technology. One of their latest developments is an **unmanned surface vessel** (USV), an 8.5-metre vessel designed to execute a wide range of maritime missions.

"It's designed to perform various missions," Tamm noted, emphasising the USV's versatility. He then provides a specific example, highlighting its potential role in safeguarding critical infrastructure: "For example, to protect undersea cables, which are vital for global communication and energy transfer, the USV could be deployed for surveillance and patrolling in areas where these cables are located, ensuring their security and detecting any potential threats or interference."

While the primary focus of the USV's design is on versatile operations such as patrols, escorting, and logistics, CEO Tamm acknowledges their potential for "kamikaze mission" capabilities. He notes that this was one of the possible applications of the vessel, though it wasn't the central purpose of its development. The USV's design, therefore, incorporates the capacity for both conventional maritime roles and the option for high-impact, targeted operations. The USV has a significant maximum operational range of over 800 kilometres.

DefSecIntel is collaborating with another Estonian success story — Baltic Workboats — on the USV project. Baltic Workboats is responsible for building the hull of the vessel. While the USV is currently undergoing testing and development with the Estonian Navy, there are plans to deploy it in Ukraine in the future, demonstrating DefSecIntel's commitment to supporting defence efforts in the region.



Photo by Andriy Partyshev/ DefSecIntel Solutions

Photo by Risto Štukert / DefSecIntel Solutions



SurveilSPIRE (left) ja CAIMAN (right)

Competitive advantages and strategic vision

Real-world operational success, particularly in the challenging environment of Ukraine, has served to validate the effectiveness and robustness of DefSecIntel's technology.

"Our solutions are used extensively in Ukraine," Tamm confirmed, underscoring their crucial role in supporting the country's defence efforts. More specifically DefSecIntel's surveillance and counter-drone technology has been deployed. This experience has not only demonstrated the resilience of their systems but also provided invaluable feedback for ongoing development and refinement.

Looking to the future, DefSecIntel has ambitious plans for continued expansion and innovation. The company aims to extend its reach within Europe, offering its proven solutions to enhance the security of European Union borders and NATO member states.

"Our big goal is to help protect the external border of the European Union and NATO," Tamm emphasises. DefSecIntel is also actively involved in collaborative European defence initiatives, working alongside other industry leaders to drive innovation and shape the future of defence technology.

Beyond the technological advancements, DefSecIntel is experiencing rapid growth and demonstrating significant ambition. The company is expanding its workforce and moving to a new factory to accommodate its increasing scale of operations and production capabilities. This expansion aligns with DefSecIntel's ambitious financial targets, as the company aims to achieve a turnover of €100 million within the next 3 years.

Strategic partnerships and market focus

DefSecIntel's strategic vision extends beyond Estonia's borders. The company is actively pursuing partnerships and market opportunities to expand its reach and impact.

Tamm emphasises the company's orientation on export, stating that a significant portion of their products is destined for foreign markets. "We are a strong exporter," he confirmed. "Last year, 99 percent of our products went to foreign markets." This export focus underscores the global relevance of DefSecIntel's technology and its potential to contribute to defence and security on a broader scale.

DefSecIntel is countering the challenges posed by "jamming", or signal interference, which can disrupt the operation of drones and other systems. To counter this, the company employs a range of strategies. These include integrating solutions from specialised providers and exploring emerging technologies, such as those that have been tested by other companies on the frontlines in Ukraine. A key principle, as Tamm emphasised, is that systems cannot rely solely on GPS. DefSecIntel is committed to continuous development, innovation and cooperation with other companies to stay ahead of evolving jamming techniques.

The company is also strategically engaging with key stakeholders in the European defence sector. DefSecIntel collaborates with a range of partners across Europe and actively participates in several high-level defence research and innovation projects supported by the European Defence Fund (EDF) and its pilot programme, the European Defence Industrial Development Programme (EDIDP). Current projects include PEONEER, AI4DEF, EDOCC, FaRADAI, and HSM4COM, with additional initiatives pending the finalisation of evaluation results.

HEVI Optronics: small team, sharp vision

By Sven Paulus



Photo by HEVI Optronics

In just 4 years, Estonian tech firm HEVI Optronics has risen from a startup idea into a serious international player in the field of military-grade camera systems. Named Estonia's Defence Industry Company of the Year in 2024, the company has built a reputation for precision engineering, strategic focus, and quiet determination.

Kristjan Tiimus

"We didn't take bank loans, we have no investors — the entire development process was carried out at our own risk and personal accountability," says **Kristjan Tiimus**, CEO of **HEVI Optronics.** "We built the company on trust, shared experience, and a clear plan."

The idea emerged in late 2020, and the company was officially founded in March 2021. Tiimus describes it as a moment of opportunity: "It was as if the stars aligned — we sensed a shift in the market and realised it was the right time to act." From the outset, the company committed to a strict principle: no prototypes, no partial solutions. "We knew we didn't want to sell anything unfinished."

Instead of targeting end users such as the armed forces directly, HEVI Optronics chose a B2B strategy. Their camera systems are integrated and sold by large defence contractors under their own brands. "We don't chase end clients — our focus is on building partnerships," explains Tiimus. That decision helped them overcome a steep market entry barrier.

Small team, big capabilities

With just 20 employees, the team has delivered results that rival companies ten times their size. "People are often surprised that such a small team can manage serious, high-level projects," says Tiimus. Their edge lies in planning; the core architecture was designed early and built to be modular and future-proof.

HEVI Optronics stands out by offering complete turnkey systems. Each solution includes cameras, mounts, control units, cables, power systems, and clear documentation — all packaged in rugged military cases. "When the client opens the case, everything's there. You plug it in, and it's ready to go," Tiimus says. Even frontline soldiers can be trained to use the system in under 30 minutes — full capability, rapidly deployed.

Technical simplicity for the user does not mean compromise on capability. Their systems are robust, versatile, and certified to military standards. "The system itself is complex, but it must be operable under pressure in tough environments by non-experts," says Tiimus.

Speed of support is another key differentiator. While global manufacturers often take months to respond to service issues, HEVI Optronics guarantees immediate reaction times and provides replacement units if needed. "That attitude is why clients want to work with us," says Tiimus.

Kalev Koidumäe, CEO of the Estonian Defence and Aerospace Industry Association, calls HEVI Optronics a model for the entire sector. "They're not the loudest, but they are one of the most focused and disciplined companies in the field. They built quietly, delivered consistently, and are now ahead of the curve."

Future-focused and field-proven

The company is committed exclusively to military applications. While their camera technology could be used in civil security or infrastructure monitoring, they've chosen to remain focused. "We don't compete with low-end surveillance — we build only military cameras," Tiimus states.

Their systems are deployed on tanks, armoured vehicles, naval platforms, radar towers, and stationary positions. They're designed to be remotely operated over satellite or long-range fibre connections, allowing users to control them from hundreds or even thousands of kilometres away. Imagine that — commanding a frontline camera from across the continent.

Modularity allows different sensors to be accepted by the same camera head — from thermal imagers to lasers — depending on the mission. "Our architecture allows clients to quickly swap out components, even in the field," explains Tiimus.

While the systems do not include in-house AI, they are built to support it. "We don't build AI algorithms ourselves, but our cameras are ready to run them," Tiimus says. "Our partners can install drone detection, object recognition, or other advanced tools — that's a strategic decision. We stay focused on what we do best."

Production has grown rapidly: in their third year, HEVI Optronics produced €4.5 million worth of systems; in the fourth, that doubled to €10 million. In 2024, they plan to produce 500—1000 systems. Most are deployed in Ukraine, but systems are also shipped to the US, Japan, Africa, and Asia.

"Companies like HEVI Optronics prove that Estonia can punch above its weight in defence tech," says Koidumäe. "They show what's possible when a team stays focused and follows through."

As for the Defence Company of the Year title, Tiimus is modest: "It's not a badge we measure ourselves by. We're still small — just 20 enthusiasts building high-end cameras. But we're ahead of our original plan, and we're moving forward with confidence."

And yes — they're just getting started.



Helsing: the AI powerhouse reshaping Europe's military future

by Maris Hellrand



Photo by Helsing

For years, Europe's defence capabilities were often dismissed, but a quiet revolution is underway. At the heart of it is a Munich-based startup that's rewriting the rules of warfare using algorithms and precision mass.

Photo by Ministry of Defence



Estonian Minister of Defence Hanno Pevkur signs the agreement with Helsing. After becoming an e-resident of Estonia, Gundbert Scherf, co-CEO of Helsing, can now securely sign documents digitally

Meet Helsing, a company founded in 2021 by an unlikely trio: gaming visionary **Torsten Reil**, former German Ministry of Defence advisor **Gundbert Scherf**, and tech strategist **Niklas Köhler**. Their mission? Not to build bigger tanks or faster jets — but to bring AI and autonomous capabilities to the battlefield, making militaries smarter, faster, and far more agile.

And now, with Germany's historic €500 billion defence fund in play, Helsing may be the most important defence company in Europe, and this spring, it is launching production in Estonia.

A strategic shift: from steel to software

While traditional defence giants poured billions into hardware, Helsing took a radically different approach: military-grade artificial intelligence. Their platform processes chaotic battlefield data in real time, producing intuitive, game-like visualisations for commanders on the ground. It's a software-first strategy that dramatically enhances existing military systems but recently, Helsing has started producing affordable and mass-producible hardware — intelligent systems that are still cheap enough to produce in big numbers. The production of its AI-guided HX-2 drones started last year.

Proving grounds: Ukraine

Helsing's technology isn't just theoretical. Since Russia's invasion of Ukraine in 2022, the company has deployed personnel and AI systems directly to the front lines.

Ukrainian forces have used Helsing's software to identify and neutralise Russian targets with unprecedented speed and precision. As one defence analyst put it, "The war in Ukraine is proving that software, not hardware, will determine future conflicts. Helsing understood this before anyone else."

These battlefield lessons have fuelled rapid development — and even faster funding.

Despite its moderate size — just 500 employees across Germany, France, and the UK — Helsing has quickly become Europe's most valuable defence tech startup with nearly €800 million raised in just 3 rounds over 3 years. Among others, the latest investment round led by General Catalyst also included the Tallinn-based venture firm **Plural**, founded by the early-stage **Skype** executive **Sten Tamkivi** and **Wise** co-founder **Taavet Hinrikus**.



Photo by Helsing

Estonia: the Baltic Beachhead

"Philosophically, Estonians think about how to defend the country every day," says tech entrepreneur Sten Tamkivi. He adds that the war spurred him and his partners to tap their €800 million investment platform Plural for defence projects and others that support European sovereignty. "We never came into this saying we want to do defence, but growing tension on NATO's eastern flank is tactile," Tamkivi adds, noting a growing number of defence pitches and foreign investors scouring for opportunities in the sector. "Working together on defending democracies is crucial, especially in this time and place," he concludes.

Now, Helsing is expanding eastward. As part of a joint initiative with the Estonian Ministry of Defence, the company is investing €70 million to expand operations in Estonia and the Baltic region — including new production facilities.

"The new security environment in Europe requires decisive action from governments and the defence industry to lead in the development and deployment of modern defence capabilities," says Estonia's Defence Minister **Hanno Pevkur**. "Helsing's decision to bring part of its operations to Estonia is also a recognition of Estonia's commitment to strengthening national defence and providing a favourable environment for defence technology companies."

The partnership is built around AI-driven enhancements to Estonia's defence systems — including software-defined reconnaissance and strike capabilities — as well as cooperative testing of emerging technologies. "Protecting NATO's eastern flank is a mission of critical importance, while the security challenges we face as an alliance are evolving rapidly. Delivering robust deterrence requires not only the latest technological advancements but also strong collaboration between government and industry", says Scherf, co-CEO of Helsing. He adds: "We are proud to partner with Estonia, a nation that has consistently demonstrated leadership in embracing cutting-edge technologies. Together, we can develop AI capabilities in the field of defence that will strengthen both the Estonian Defence Forces and the entire alliance." Gundbert Scherf also became an e-resident to be able to sign off important decisions remotely with the secure Estonian state-backed digital ID.

Germany's €500B game-changer

Helsing's future is directly tied to Germany's unprecedented decision to unlock over €500 billion in defence spending. This is not just about tanks and jets. Germany has clearly signalled a pivot toward rapid modernisation through software — Helsing's specialty. Now, with the floodgates open, Helsing is uniquely positioned to become one of Europe's key defence players.

Europe's answer to Palantir?

In the US, defence-tech titans like Palantir, Anduril, and Shield AI are redefining modern warfare. Helsing is Europe's answer — a lean, mission-driven company whose founders openly state their goal is to "protect democratic societies". In doing so, they've built not just software, but a new military paradigm: one where defence is driven not by brute force, but by algorithmic advantage.

As NATO's eastern border grows ever more volatile, and as American support for Europe wavers, Germany's €500 billion investment is more than strategic — it's existential. And Helsing stands at the centre of it all.

'The future of European defence will not be decided by the size of its armies... but by the sophistication of its algorithms'

Photo by Liis Kõser



A league of their own

By Ede Schank Tamkivi

Drone flying could easily become the new national sport of Estonia while better preparing the nation for any possible military action.

Helena Kotka and her Unicorn Squad teammates assemble drones with Janno Siimar



Photo by Janno Siimar

As soon as the weather is nice enough, Morten Siimar and his training buddies take their drones outdoors

A run-down industrial building on the deserted main square in the centre of Saue, a small town near Tallinn, looks completely abandoned on a chilly March night, but entering through a solemn-looking door, one finds oneself on the second floor, bustling with activity. A group of teenagers, as well as some slightly older drone enthusiasts, gather here twice a week to test their flying machines. Following a set course, they are racing each other for the best result.

While it's pitch black outside, the drones smoothly follow the LED-lit course, impeccably passing through illuminated loops made out of hula hoops. The teenagers are all very focused and unfazed by the fact that it's almost 8 o'clock on a school night. The racers are all wearing their FPV (first person view) masks/goggles, as this is how the racing drones differ from the hobby ones; wearing the headset gives the "driver" a much more precise view while directing the machine instead of looking at a screen that may delay the video by several milliseconds.

HOBIZone has been operating in this former storage unit since the year 2014, having started out as the indoor remote-controlled car racing rink and adding drones to the mix a few years later. This has sparked enthusiasm in other places around the country, and dozens of fans now practise either on simulators or fly their FPV drones indoors. As soon as the weather gets warm enough, they take their bigger drones to the remotest fields and forests — wherever one is allowed to fly.
Janno Siimar himself started out as a model plane enthusiast several decades ago, and during Covid lockdowns, he and his then 12-year-old son Morten got into drones. The boy had shown keen interest in gadgets from an early age, and Janno first bought his son an Xbox for his first birthday. "I'm not sure for whom it was mostly intended," he muses now.

Sixteen-year-old middle-schooler Morten Siimar is the 2025 MultiGP VRL team sim-racing World Champion, holds two consecutive Estonian Championship titles, is the captain of Drone Racing Team Estonia, and just recently returned from the Drone Racing World Cup in Riyadh.

Girls take over

Although the drone club at Saue HOBIZone so far consists of only boys, flying drones is not a sport that segregates based on gender. There are more than 300 girls waiting in line at the **HK Unicorn Squad** STEM-club to start assembling and flying drones.

"Most of our Pro-course teams are still setting up their online stores, but several groups have already passed the first drone course as well," says **Liis Koser**, leader of HK Unicorn Squad, summarising things. The Pro-level of the HK Unicorn Squad consists of four 35-hour modules and the second one is dedicated to drones exclusively. On completing the module, one will know the function of each part of the drone, how aerodynamics work, and what the legal limitations for flying drones are. HK Unicorn Squad was set up in 2018 by entrepreneur and former CIO of Estonia **Taavi Kotka** as a STEM club exclusively for 8-to-14-year-old girls. The club is named after Taavi's daughter Helena Kotka, who was

kicked out of her school's robotics class when the teacher did not consider girls worthy of his attention. Seven years later, HK Unicorn Squad has almost 5000 active members all over Estonia, parents operate as volunteer teachers in local clubs, and Helena's robotics skills have long passed that of most boys her age.

Taavi Kotka will probably never forget why he set up HK Unicorn Squad, yet he has forgiven the school and just recently provided the institution with a free drone simulator for kids to practise flying drones during breaks instead of staring at silly cat videos on their phones. "There is always a queue for the simulator," a 6th grader complains, patiently waiting for her turn.

The simulator consists of an off-the-shelf remote that can cost around just €40 (but can go up to €600) and free software from Steam that looks like a regular video game but is actually a sophisticated training tool that closely mimics flying a real FPV drone.

Sports or soldiering

Janno Siimar remembers that he first got interested in drone racing around 2017-18. At that time, as drones had become accessible enough for amateurs, one could buy a proper flying kit for €500. Although the price has remained relatively stable, the quality of the drones has progressed immensely: the video recording system is dramatically better, there is virtually no delay between the remote and the drone, and the goggles are much faster. Janno is a firm believer that building your drones from spare parts is just as interesting for learning as the racing itself.

"It's an intensely individual group activity," he says, referring to the sport. "You have to lead yourself, as you are competing against yourself. Each day you want to become better than yesterday. It's a systematic movement towards a goal that's not just the end of the schoolyear."

Learning how to assemble and fly a drone is a crash course for any techie — having mastered these skills, one can assemble all kinds of electronics equipment. These skills will definitely become handy in any situation. And as we've seen in the setting of the Ukraine war, where each day unmanned aircraft take down enemy forces, and millions of remotely piloted aircraft have been built and demolished, drones have become decisive weapons of modern warfare.

"War is definitely not the best motivator because it's short-sighted," Siimar claims. He'd much rather see it as a competitive sport that gets youngsters into engineering. "It is all about making machines do what you want them to do."

Taavi Kotka agrees. Yet he wants to seize the opportunity at hand: 5000 girls skilled to remotely pilot drones all around the country is a major security asset.

Photo by Liis Koser





Photo by Patrik Tamm

Vabamu – building bridges to keep Estonia free



Photo by Kristi Sits

The story of Vabamu begins with the story of Olga Kisler-Ritso, who was born in 1920 in Kyiv, Ukraine. After losing her mother and having her father imprisoned in a Siberian labour camp by the Bolsheviks, 2-year-old Olga and her 7-year-old brother Aadu were sent to Estonia by their uncle. There, in her father's homeland, Olga found stability with the Ollik family who adopted her.

Olga studied medicine at the University of Tartu and graduated as a medical doctor in 1944. That same year, as Soviet forces occupied Estonia, she joined tens of thousands of Estonians who fled their homeland in search of safety. By 1949, Olga had resettled in the United States, where she built a successful career as an eye surgeon and earned recognition as a leading specialist in her field.

When Estonia regained its independence in 1991, Olga wanted to give something back to her homeland to make sure that the crimes committed during Estonia's recent past would never be repeated. And thus, the idea of creating the Museum of Occupations Museum, later renamed Vabamu, was born.

Museum of freedom

Vabamu Museum of Occupations and Freedom is located in the heart of Tallinn and its permanent exhibition, **"Freedom without Borders"**, tells the story of occupation, resistance, freedom, and recovery. Through powerful personal accounts and immersive displays, visitors gain a deeper understanding of the struggles faced by generations past — and the persistence and strength it took to reclaim freedom.

In addition to the main building, Vabamu operates the KGB Prison Cells in Tallinn's Old Town. The exhibition, "**Locked Up Stories: The KGB in Estonia"**, located in the former headquarters of the Estonian branch of the KGB, tells the stories of the Soviet terror apparatus and the resilience of its victims.

Vabamu museum hosts a variety of temporary exhibitions, through which topics such as Estonia's digital state, the feminist movement, and the role of civil society in supporting Ukraine are explored. Vabamu's team is currently developing a major new exhibition on the Estonian diaspora that will open in January 2026. **"Global Estonians"** will share the remarkable histories of Estonian communities established around the world.

Engaging youth

Vabamu's youth programme NoVa engages students in dialogue and encourages them to think about the meaning and value of freedom, democracy, and security. If you know teenagers eager to understand the world around them, direct them to NoVa's engaging online study bites and courses. For example, **"Disinformation Strategies Spanning Generations**", a new course developed in cooperation with the Ministry of Defence, teaches students to become savvy information consumers.

NoVa also organises in-person educational activities at Vabamu, such as bringing together high school students with people deported to Siberia as children in the 1940s. "This was a very emotional experience for me," said one student participant after attending such a gathering. "It made me think about the past and the future, the resilience of humankind, and the ability to overcome trauma. The personal stories of survival helped me realise the immense impact of the deportations and the importance of learning from the past."

Beyond these initiatives, NoVa empowers the youth to lead their own activities. In autumn 2024, high school students organised a mock US presidential election at Vabamu to learn how the American electoral system works. The event drew over 160 teens for a lively evening where participants took on the roles of candidates and voters from across the United States. A similar event will be held this autumn on e-voting in Estonian local elections.

Globally connected

Vabamu's mission is to keep Estonia free — plain and simple. To support this, Vabamu has created **Global Conversations**, a multi-faceted effort aimed at strengthening Estonia's international connections so it will never be alone again.

At the heart of Global Conversations is Vabamu's long-standing partnership with Stanford University, which facilitates the exchange of students and scholars between Estonia and the United States. What began with just a few students has grown into a vibrant programme that helps future leaders form lasting ties with the region. It is heartwarming to see how, upon returning home, many Stanford students become informal ambassadors for Estonia, sharing their experiences with enthusiasm.

Vabamu also builds bridges between Estonia and the world through initiatives like Estonia's Friends International Meeting and its partnership with CDL-Estonia, an international startup mentorship programme. Through its concierge service, Vabamu welcomes international delegations with tailored programmes that showcase Estonia's industries, innovations, and digital success story. In these ways, Vabamu makes Estonia bigger, stronger, and more connected worldwide.

Photo by Rea Kõiv



Enhancing security through language learning – the new digital platform ALPA Kids

By Mariel Korjus



Photo by Tanel Meos

Language isn't just a way to communicate — it's how we share our culture and keep our identity alive. When a country's safety is at risk, staying connected through a common language and understanding becomes more important than ever.

The Estonian-made educational application ALPA Kids empowers children to keep learning through educational games, helping them preserve and develop their native language even when access to education in their own country is disrupted by war or hardship.

By offering interactive and engaging content, the app allows children to continue building their skills and knowledge, staying connected to their cultural roots no matter where they are. This not only supports their education but also strengthens their sense of identity and belonging, fostering resilience in the face of adversity.

App born from a personal need

ALPA Kids began when the company's founders, **Kelly** and **Mikk Lilles**, moved abroad with their young children. It quickly became apparent that there were limited opportunities for children to learn and engage with their mother tongue. "We wanted our children to maintain their Estonian language and learn through digital games, but we couldn't find any educational games in Estonian either on Google Play or the App Store", Kelly recalls. This realisation sparked the idea to create an app that would combine playfulness, education, and a strong connection to Estonian language and culture.

However, the challenge of preserving languages is not unique only to Estonians. "Nearly 7000 languages are spoken worldwide, yet high-quality digital learning content is mainly available only in the world's major languages," Kelly explains.

The husband-and-wife team set out to develop a platform that could be easily localised — providing children around the globe with access to high-quality educational games in their native languages.

Learning through curriculum-aligned digital games in their own words

Children today have high expectations when it comes to quality — they need engaging visuals and interactive animations to stay interested. "In our app, we use professional voice actors instead of artificial speech," Kelly explains. This focus on quality brings the content to life and makes learning a more immersive experience.

From a technical standpoint, ALPA Kids prioritises tools that support both parents and teachers. The app's process-tracking feature helps identify gaps in a child's understanding, ensuring the right subjects are in focus. Each child has a personalised learning journey, with the recommendations providing new content tailored to their individual skill level.

The app also caters to children with special needs, offering features such as automatic slowing down of in-app speech. Additionally, the app can be used offline — an essential feature in educational settings where Wi-Fi isn't always available. The offline functionality has proven invaluable, for instance, during air travel or unexpected power outages — such as those experienced in Ukraine. By combining quality and accessibility, ALPA Kids allows every child to learn at their own pace, wherever they are.

ALPA's mission in Ukraine

Since Russia's invasion in 2022, supporting the education of Ukraine's children has been a personal mission for the ALPA team. "We wanted to support the Ukrainian people in a meaningful way, so we decided to localise the app for the Ukrainians," Kelly explains. "We made it available to everyone, allowing children who were forced to leave the country to continue learning in their mother tongue and providing a comforting educational environment for those who remained in Ukraine during challenging times."

In just a few years, ALPA Kids has reached over half a million Ukrainian children, with users now spread across 130 different countries, giving

Photo by Sulev Lange



ALPA team



Photo by Ingrid Kerson

them a unique insight into where Ukrainian children have settled around the world. "The app is also used by Russian-speaking children in Ukraine to learn Ukrainian, which understandably doesn't sit well with certain groups," Kelly explains. "This has led to a surge of abusive messages and targeted efforts to lower ALPA's ratings, making the app harder to find."

Fortunately, Google has been removing offensive content as swiftly as possible. While low ratings cannot be erased, this hostility has done little to lower ALPA's popularity among Ukrainian families — demonstrating the power of education and cultural connection.

The ALPA app is gaining widespread popularity

ALPA Kids is currently available in 15 languages, with a special emphasis on the Nordic countries, central and eastern Europe, and India. "We've been honoured to receive several prestigious awards, both in Estonia and internationally," says Kelly. "These include the Estonian President's and Chancellor of Justice's 'With Children and for Children' award, the Ministry of Education and Research's KeeleTeo Award, and HolonIQ's recognition of ALPA as one of the top education companies in the Nordic and Baltic regions."

With more than 2 million children having used the app, ALPA Kids has become an integral part of the curriculum in over 400 educational institutions across Estonia and globally.

Bold vision and purposeful partnerships

Today, the team is actively expanding into new markets where there is a lack of native educational content. Alongside this, they are developing the app further, including a chatbot for children and a range of exciting new educational games, as well as tools for teachers.

ALPA Kids is working closely with local authorities, schools, and international partners, including educational technology networks and research institutions such as Tallinn's Education Authority and EduVilnius from Lithuania. ALPA has also been supported by private companies such as Delfi Group, iDeal, and Google Play. These partners have provided assistance with technical and market research, as well as communication, filming, and distribution of the company's story. Additionally, ALPA Kids was selected for the Google Play European Book as an example of an outstanding app, further solidifying its reputation in the education technology sector.

Language as the foundation of national identity

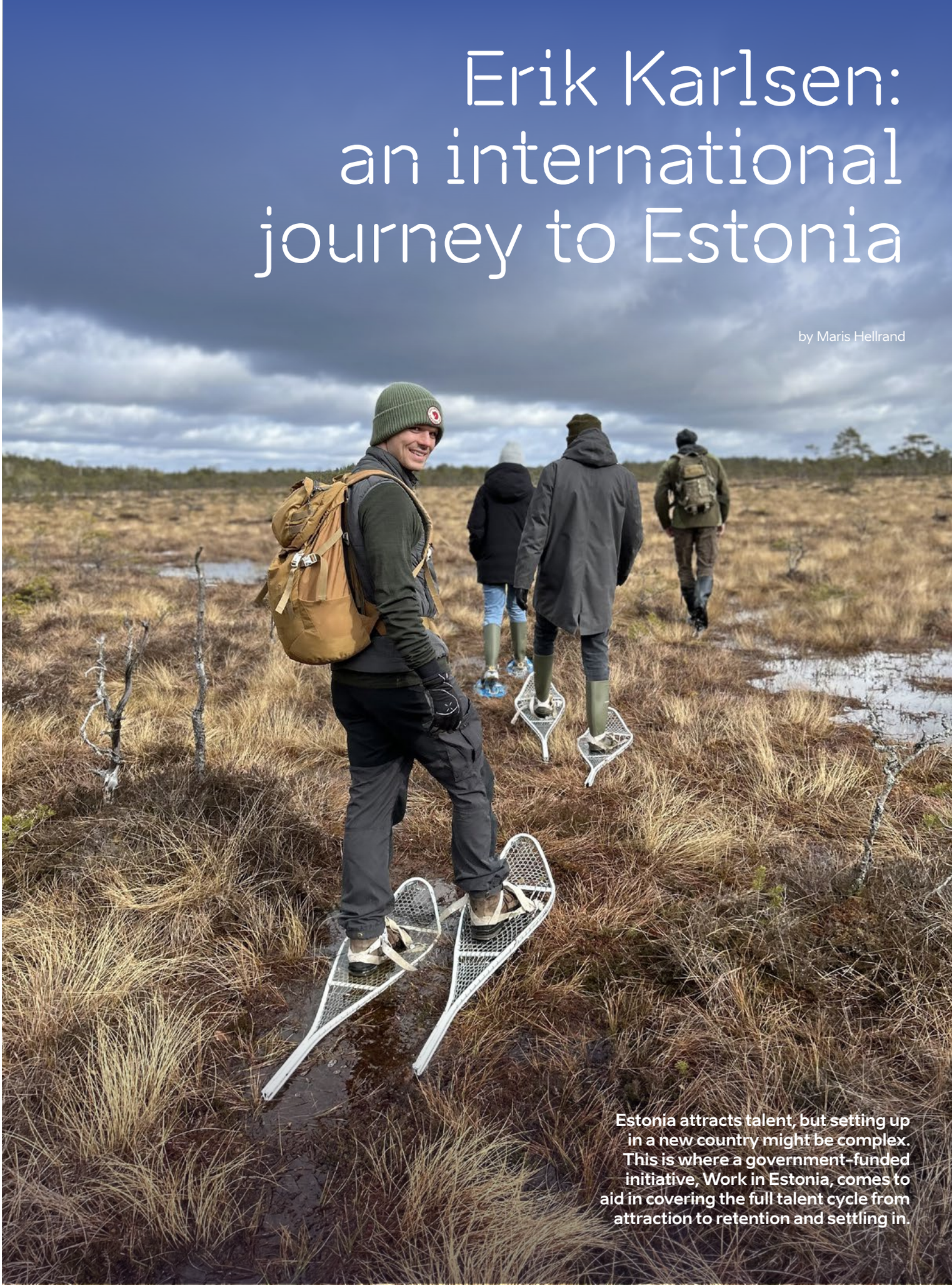
A country's survival in times of crisis depends on the unity and determination of its people to protect their land, culture, and freedom. It's during war and hardship that preserving a nation becomes vital, as its future hinges on how strongly we can hold on to our language, heritage, and shared purpose.

In this context, the ALPA Kids app stands as a powerful example of how an app can strengthen this very foundation. By supporting language preservation, it can contribute not only to the development of individuals but also to the broader mission of safeguarding national identity. Kelly sums things up like this: "The app holds the potential to play a significant role in various sectors, including healthcare, specifically in speech therapy and assessment of child development; culture, where it can aid in the preservation of folklore and language; and crucially, in security. Language forms the very foundation of national identity, and we have always recognised its vital importance in safeguarding a nation's future, particularly in times of crisis."

Photo: private collection

Erik Karlsen: an international journey to Estonia

by Maris Hellrand



Estonia attracts talent, but setting up in a new country might be complex. This is where a government-funded initiative, Work in Estonia, comes to aid in covering the full talent cycle from attraction to retention and settling in.

A global background with Norwegian roots

Erik Karlsen's journey to Estonia is a story of adventure, love, and adaptation. Born and raised in the United States, Karlsen pursued a degree in mechanical engineering in New Jersey. However, his life has always had international flair. Being half Norwegian, Karlsen's heritage played a role in shaping his career path, as he sought opportunities beyond the USA early on. "Because of that, I did an internship in Norway," Karlsen explains. "My first job out of college was also in Norway, working in the oil industry."

Over time, he moved between jobs in the United States but maintained a strong inclination toward global experiences. His passion for travel, nature, and outdoor activities — such as hiking and orienteering — has been a key part of his lifestyle, making him open to new environments and challenges.

From hiking trails to a career at Karl Storz

Karlsen's move to Estonia was not just career-driven but also a personal decision influenced by an unexpected encounter. While hiking the Mont Blanc trail — a trek spanning Italy, Switzerland, and France — he met his now-partner.

"I saw this little ad on Facebook about hiking in Italy, and I thought, why not?" Karlsen recalls. "I ended up meeting a girl from Estonia on the trail, and that girl is my partner now and the mother of my child."

What began as a shared love for adventure blossomed into a serious relationship, prompting discussions about their future together. The couple realised that long-distance was not a sustainable option, leading them to explore job opportunities in each other's countries, and finally a company in Estonia became the first choice. "Then I got a wonderful job offer from Karl Storz around 3 years ago, so I came to Estonia," says Karlsen.

The decision to relocate required significant changes — selling his house and car in the US — but it marked the beginning of an exciting new chapter. Today, he and his partner have a 4-month-old son, and Estonia has become their home.

Adjusting to life in Estonia

Moving to Estonia came with its fair share of adjustments — in particular, setting up personal identification, tax information, residency, and banking was initially complex.

"It was quite difficult and complex setting up in Estonia," Karlsen admits. "Later I heard that the government-funded initiative **Work in Estonia** actually walks foreigners through the entire process, but I learned that after I had already done everything myself."

However, once these formalities were completed, life in Estonia became remarkably smooth. For instance, he was pleasantly surprised at how efficient the Estonian tax system is. "I did my taxes the other night in like 3 minutes on my phone," he says, laughing. "It was amazing."

Public transportation has been another positive aspect of his experience. Living in Kalamaja, Karlsen enjoys walking to the train station every morning and taking the train directly to work in the office in Laagri, just outside Tallinn. "I love taking the train to work. It's peaceful, it's quiet, it's always on time," he says. "And that little bit of walking to and from the station makes a big difference in my daily routine."

Language, culture, and social integration

Adapting to Estonian culture has been both intriguing and challenging. Estonians, much like Norwegians, are known for their reserved nature. "Estonians seem very cold at first. They don't really want to talk to you unless you know them or have something specific to talk about," Karlsen observes. "But once you get to know them and build trust, it's a different story."

Determined to integrate, he enrolled on an Estonian language course, funded by his company. "I couldn't get into the state-provided language course because the website crashed due to huge number of applicants when enrolment opened," he explains. "Luckily, my company stepped in and paid for another course, which was awesome."

While he has acquired a foundational understanding of the language, fluency remains a work in progress. Weekly language exchange sessions with colleagues have helped him improve, while also assisting them in learning English. The language barrier is most noticeable in everyday situations like when he forgets to buy the train ticket or similar. His family life has also motivated him to embrace the Estonian language. His son holds dual citizenship — American and Estonian — and Karlsen wants to be able to communicate effortlessly with his Estonian in-laws, who speak limited English.

Finding a community and embracing the outdoors

Beyond work and family, Karlsen has sought to build a sense of community in Estonia. While his partner has been instrumental in connecting him to Estonian culture, he has also taken independent steps to engage with local activities. An avid outdoor enthusiast, he has taken up kitesurfing and frequently hikes in Estonia's forests and bogs — natural landscapes he had never experienced before moving here. "I'd never experienced bogs before Estonia," he says. "They're really cool."
He and his partner also enjoy Tallinn's vibrant coffee culture. Living in Kalamaja, they often visit the coffee shops in Telliskivi and the Old Town, even participating in a coffee cupping class at Paper Mill Roastery.

Estonia as home

At 34, Karlsen has found a comfortable balance between work, family, and his personal interests in Estonia. While he still dreams of travelling to the Alps and other mountainous regions, he appreciates the unique experiences Estonia offers.

Would he recommend this life to others? Without hesitation. "I really enjoy Estonia. I appreciate being here," he says. "Part of that is the small-town feel of the entire country, and also how well Tallinn merges old and new architecture. It's something really special."

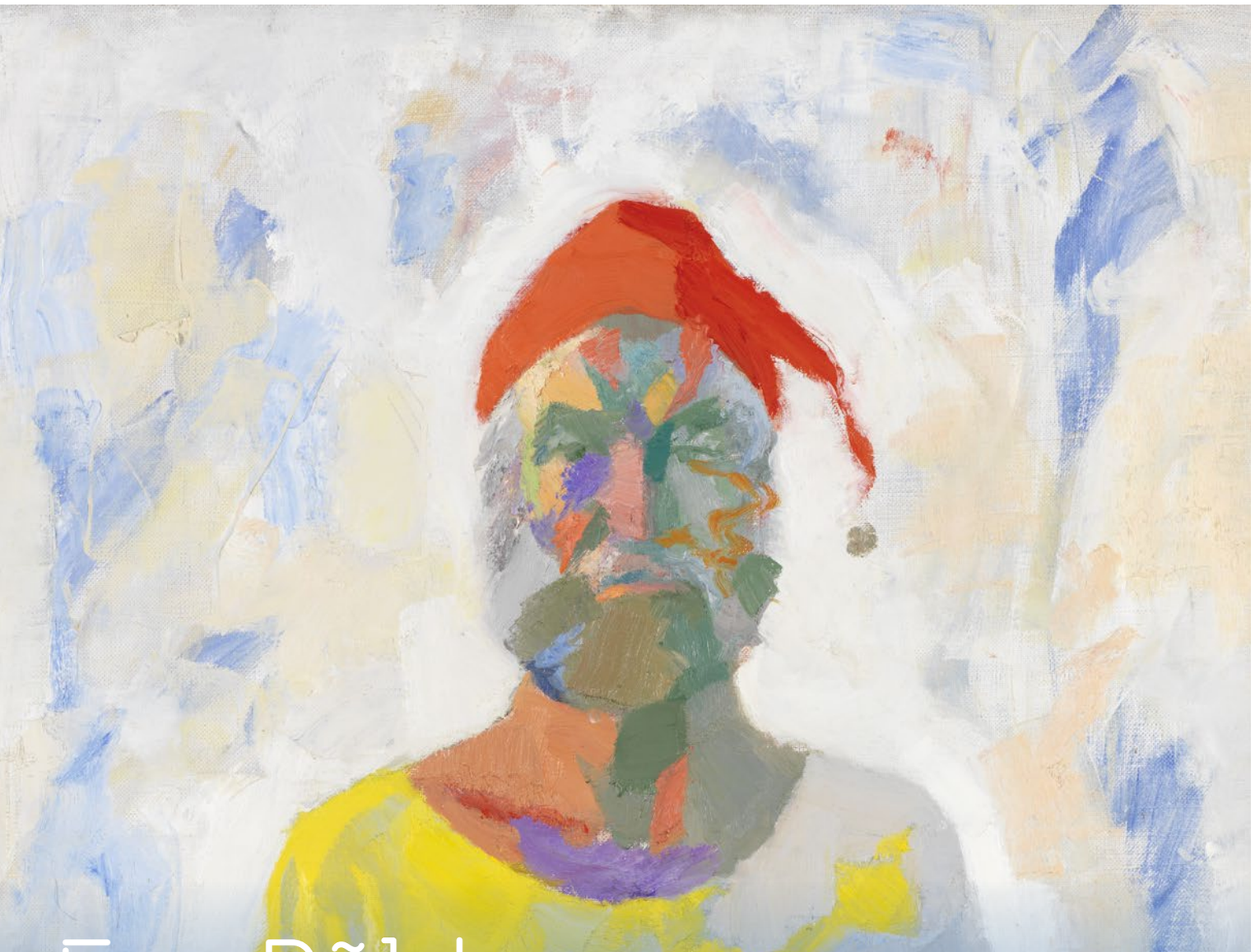
With a fulfilling career at Karl Storz, a loving family, and a growing appreciation for Estonian culture, Erik Karlsen has found his place in this northern European gem.

Photo: private collection



Work in Estonia

Work in Estonia is a government-funded initiative to support Estonia´s rapidly growing ICT and technology sector. Its area of expertise is talent attraction management, by introducing Estonia as a top choice for international tech talent worldwide and supporting them on their settling-in journey. They cover the full talent cycle from attraction to retention and settling in.



Photos by Stanislav Stepashko

Enn Põldroos: Museum of Obsessions

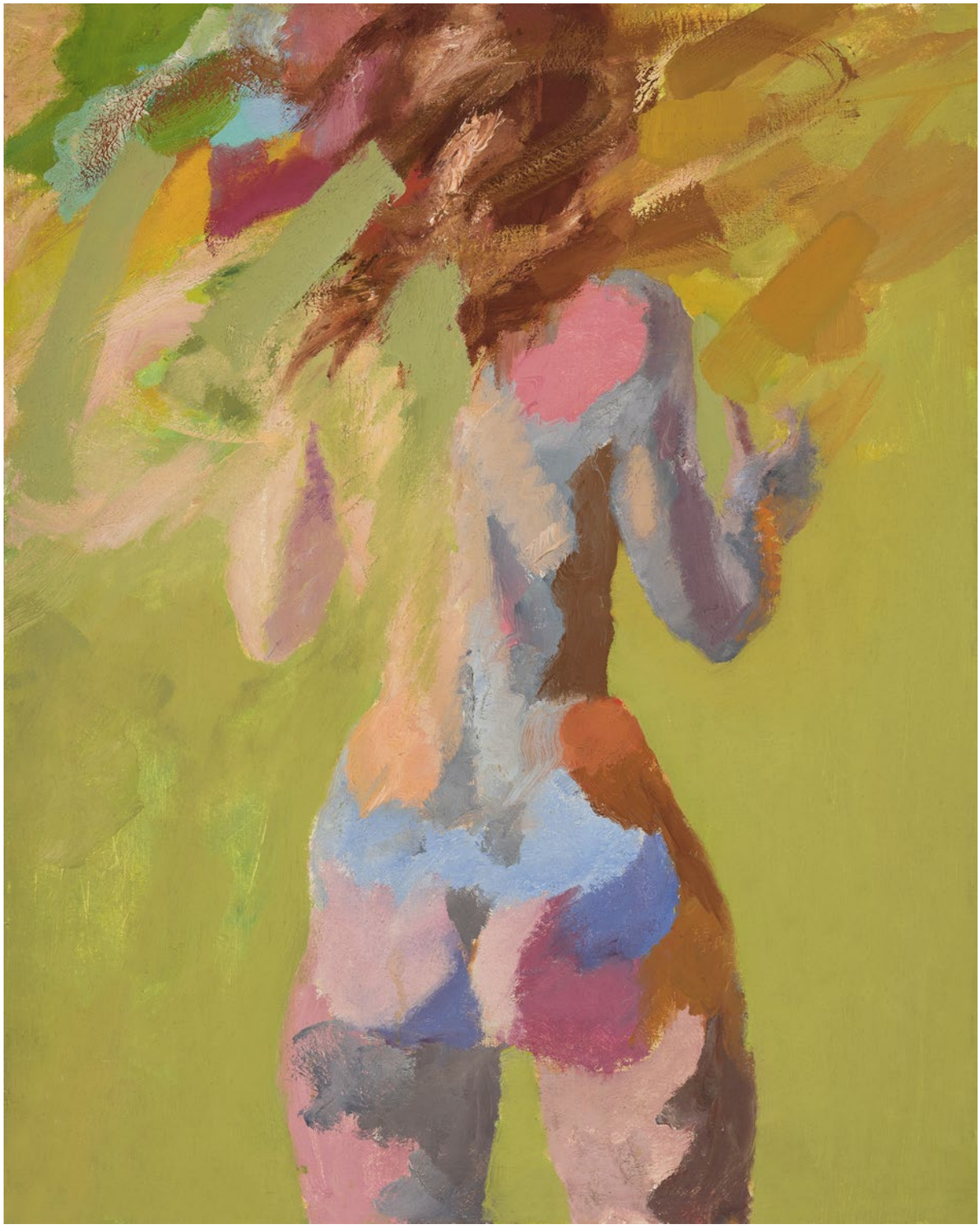
In Estonian art history, **Enn Põldroos** (b. 1933) is seen as an adventurous artist who is known for experimenting with a wide variety of painting techniques and styles. Since the late 1950s, when Põldroos graduated from the Estonian State Art Institute and emerged on the local art scene, his artistic style has changed countless times. He seems to exist in a state of constant evasion — chiefly from himself, from settling, stagnating, or becoming fixed. As he himself once said: *"My system is a lack of system."*

The creative path of Enn Põldroos is truly impressive — he has been actively and unwaveringly producing art for around 70 years, and since 1998 as a freelancer. Over the course of his life, Põldroos has had many different roles, and his influence is easy to trace: Põldroos as a teacher, a politician, a vivid social figure, a writer ...

This portfolio, containing only a tiny fragment of the 170 paintings from his recent comprehensive exhibition "Museum of Obsessions" in the Kumu art museum of Estonia, does not focus on his sheer diversity of styles. Rather, it highlights the varyingly concealed reference points, recurring motifs and genres — i.e. his "obsessions" as Anders Härm, the curator of the exhibition has named them — that have permeated his long creative journey and to which the artist keeps coming back. According to Härm, these "obsessions" comprise self-image, affect, quotes from art history, human beings and existence, geometric shapes, artificial nature and the city, nudes, and many more. Some of these are constantly "in use", while some motifs appear and disappear only to re-emerge again. Certain themes are already visible in the very early stages of his work, some recur throughout his oeuvre, some dominate specific periods, and some reappear at intervals — each time in a different form.

continues on p. 59

Portfolio
Enn Põldroos



Turned Her Back, 1981
Oil on canvas, 100 x 80cm



Park with a Fountain, 1977
Oil on canvas, 100 x 120cm



Empty Autostrada, 1976
Oil on canvas, 100 x 115cm



Guardians of the Egg, 1993
Acrylic on hardboard, 115 x 105cm



Gropingly, 2013
Oil on canvas, 80 x 100cm



Day Off, 1977
Oil on canvas, 125 x 170cm



Jump, 1977
Oil on canvas, 165 x 230cm



Grand Celebration, 1973
Oil on canvas, 175 x 240cm

Photo by Stanislav Stepashko



The exhibition "Museum of Obsessions" displays Põldroos's oeuvre in "10 acts" from 1954 to 2019

For Põldroos, these recurrent motifs in his art seem to function as anchors in stylistic whirlwinds and adventures; they hold together the artist's identity and prevent it from disintegrating, but they also make up the core of his art, the nucleus of his artistic consciousness, seeming to draw a diffuse polygonal contour above it.

Obsession # 1
Metamorphoses of the self-image

Põldroos has been constantly painting self-portraits since the 1950s. Year after year, his approach to his own image has become increasingly more merciless. The honest self-portraits reflect the artist's state of mind when they were painted, because this genre is undoubtedly a means of self-reflection and self-critique.

Obsession # 2
Expression, personality, affect

Põldroos has called painting portraits his secret passion. To him, people's faces are "microcosms", and painting a portrait means "discovering new territories". He tries to catch an emotion that is about to develop, allowing the viewer to peep behind the persona.

Obsession # 3
Renaissance in negatives

In 1999, Põldroos took a more profound look at Western art history with the series *Register,* painted in a style reminiscent of photographic negatives and setting up a dialogue with the Renaissance classics. His interest has moved towards a significant art historical formula that he, as a modern artist, can resonate with — the plots and motifs of classical art rather than the forms used by old masters.

Obsession # 4
The human being and existence

For Põldroos, the body is an important means of expression. The existential impulses in his oeuvre that are searching for a way out are usually expressed somatically. The body is the surface through which he tends to depict grotesqueness and sadness, absurdity and the weight of life, as well as the lightness of life and the pleasure of being.

Obsession # 5
A monument to existence

There was a long period in Põldroos's career when he made monumental art — from mosaic murals to large figural paintings to woven tapestry. In 1985, his most monumental work, the tapestry curtain "Human Life", was completed. This woven composition, which was designed for Tallinn's Linnahall concert venue, was 10 metres in height and 48.6 metres in length, making it possibly the biggest, or at least one of the biggest, tapestries in the world.

Obsession # 6
The spell of crumpled materials

Põldroos has a truly obsessive relationship with crumpled materials: drapery, curtains, sheets, items of clothing, boots, and veils. Drapery conceals, but it also reveals what is meant to be seen. About this idée fixe, he has said that for him, erotic mysteries are always hidden within baroque volutes.

Obsession # 7
Geometrical obsessions

Põldroos has a passion for geometrical forms, especially the sphere. In 1968, he turned to geometric abstractionism with his composition *Spheres on Red*, and in the early 1990s, he returned to his favourite image, as he realised that the process was still unfinished. He previously confessed: "I am interested in symbols whose meaning we will never know, a meaning that will keep haunting us and is impossible to get rid of."

Obsession # 8
Artificial nature

Põldroos is an artist with a profoundly urbanistic perception of life. He is not really fascinated by the wilderness. When nature appears in his works, it tends to be cultivated and designed: artificial nature, a park.

Obsession # 9
Figural composition

Large and weighty figural compositions form the central, most highly appreciated, and visible part of Põldroos's oeuvre. Having first made such works in the 1960s in a realist style, he returned in the late 1970s with paintings in which figures have been depicted in abstract form, even with metaphysical environments rendered in varying shades of only one or two colours. This century, he has addressed the conflict between society and the individual — us and them.

Obsession # 10
Body, pose, and colour

Põldroos has painted nudes his whole career. Yet, each period has its own characteristics — while in the 1960s he played with light and shade, his early 1980s female nudes focused on posture and pose. He has described the young female body as expressive: "It reveals a nascent spirituality; wishes and expectations vibrate in her posture and movements. The hands proclaim thoughts."

This year, on the 11th of September, one of the most notable composers of our time, Estonia's Arvo Pärt, turns 90.



Photo by Priit Grepp

Arvo Pärt 90

By Kristina Kõrver, Nele Kivisild and Kai Kutman

Pärt's creative output has played a significant role in shaping the soundscapes of contemporary music since the 1960s. In particular, through his unique compositional technique, *tintinnabuli*, which he devised in 1976, Pärt has profoundly affected the course of classical music. His works have reached a remarkably broad and diverse audience and have not only been sung out in concert halls and on recordings but also in films and theatre productions.

During this important year, a visit to the **Arvo Pärt Centre**, which is nestled among the pines of Laulasmaa, just a 30-minute drive from Tallinn, is well worth anyone's time. Opened to visitors in 2018, the centre houses the composer's extensive personal archive and serves as a concert and exhibition venue dedicated to his work. All year long, the centre will be celebrating Arvo Pärt's 90th birthday through concerts, a new permanent exhibition, multiple publications, and film screenings.



Photo by Kalle Toompere

A boy with a bicycle

After the Second World War, in a small town in Estonia called Rakvere, there lived a schoolboy who liked to ride his bicycle for hours in the town's central square. The boy was Arvo Pärt, and if it seemed that he was just there to cycle, that was only how it seemed. In fact, it was music that brought the young Pärt to his hometown's marketplace — music that could be heard from loudspeakers hanging on the lampposts. Back then, it was not so easy to get access to the radio, but once one was obtained, it provided the gift of listening to classical music and concert broadcasts. Arvo Pärt: "Sometimes when the wind carried these sounds into our backyard, it felt like finding the meaning of life..." From those years onwards, neither Pärt's need for music nor his love for it could be substituted by anything else. A young man had found his calling. Little could that boy have imagined that one day Rakvere would have its own modern concert hall, dedicated to the composer Arvo Pärt. The **Ukuaru Music Hall** in Rakvere will open at the end of 2025.

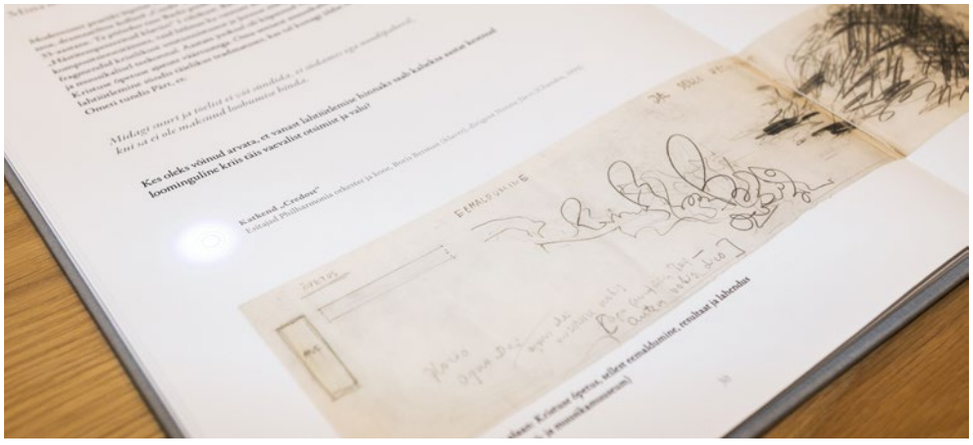
I believe

November 1968. The most important concert venue in Tallinn — Estonia Concert Hall — is crowded with people. The Estonian Radio Symphony Orchestra and Choir are on the stage, conducted by **Neeme Järvi**. And in that deeply anti-religious Soviet cultural room, the Latin words "Credo in Jesum Christum" ("I believe in Jesus Christ") unexpectedly sounded from the stage, as did a musical parable on the notes of Prelude in C Major (WTC I) by J. S. Bach. This was the premiere of Arvo Pärt's "**Credo"**. The audience was struck as if by thunder and demanded the piece to be repeated immediately.

After that evening, "Credo" was quietly but systematically eliminated from the concert repertoire, as well as from official reports. This trying episode became a landmark in Pärt's creative life, as it solidified his status as a persona non grata. New commissions were out of the question, and his earlier works also disappeared from concert and radio programmes. "This was my musical death sentence," Pärt later commented. Indeed, "Credo" led the composer into a long creative crisis that lasted for eight years and ended only in 1976 when Pärt's new compositional style — *tintinnabuli* — was born.

This dramatic piece can be experienced live this year at the **Pärnu Music Festival** in July, at the **Arvo Pärt Days** birthday concert in Tallinn in September, and at Carnegie Hall in New York in October, performed by the Estonian Festival Orchestra under Paavo Järvi.

Photo by Birgit Püve



The exhibition **"Tintinnabuli: A World on Music Paper",** which opened earlier this year, invites visitors on a serene journey to explore Arvo Pärt's unique style, which has made him a beloved composer worldwide and one of Estonia's most celebrated icons. The exhibition seeks to answer the questions of what exactly this evocatively named phenomenon is and how has it drawn thousands to concert halls, shaped the face of contemporary music, and even changed lives. Visitors can find the answers to these questions in interactive book pages that bring Arvo Pärt's musical world to life through descriptions, images, animations, and soundscapes.

Events in Estonia

21st of June
Suure-Jaani Music Festival
Vox Clamantis, conductor Jaan-Eik Tulve

16th — 25th of July
XV Pärnu Music Festival. Credo
Estonian Festival Orchestra, soloists, choirs, conductors Neeme Järvi, Paavo Järvi, Kristjan Järvi, Hans Christian Aavik

1st of August
Pühalepa Music Festival, Hiiumaa
Vox Clamantis, conductor Jaan-Eik Tulve

21st — 23rd of August
Arvo Pärt Centre, Laulasmaa
The 15th edition of the film evenings PÄRT & FILM

2nd — 11th of September
Nargenfestival Arvo Pärt Days

11th of September —16th of November
Estonian History Museum Great Guild Hall
Scripta manent VII - international exhibition of bookbinding art.
200 numbered copies of printed texts of Arvo Pärt's **"In principio. The Word in Arvo Pärt's Music"** will be printed for this exhibition.

27th of September
Arvo Pärt Centre, Laulasmaa
Latvian Radio Choir, Conductor Sigvards Kļava

17th—18th of October
Arvo Pärt Centre, Laulasmaa
International research conference
"Arvo Pärt. Ideascapes"

'One does not have to speak. But one must love. One does not have to compose, one does not have to write a book. But one must love. So it is also said in the Scripture'

Events around the world

Carnegie Hall, New York, USA
Arvo Pärt appointed Debs Composer's Chair for Carnegie Hall's Season 2025-2026

- 23rd of October at Stern Auditorium, Perelman Stage
  Estonian Festival Orchestra, Paavo Järvi
- 24th of October at Zankel Hall
  Estonian Philharmonic Chamber Choir, Tallinn Chamber Orchestra, Tõnu Kaljuste

Flagey Concert House, Brussels, Belgium
Festival dedicated to Arvo Pärt's music
8th — 11th of October 2025

Gewandhausorchester, Dresden, Germany
Arvo Pärt appointed Gewandhaus Composer for 2025-2027

Kunsthalle im Lipsiusbau, Dresden, Germany
8th of May — 31st of August
and **KUMU Art Museum, Tallinn, Estonia**
24th of October 2025 — 12th of April 2026
Exhibition "Spiegel im Spiegel: Estonian and German Art from Lucas Cranach to Arvo Pärt". Cooperation between Dresden State Art Collections, KUMU Art Museum and Arvo Pärt Centre.





Photos by Tõnu Tunnel

Eight years of searching

The year 1968 was a turning point. After "Credo", Pärt resolutely gave up all his earlier compositional techniques and styles, sensing the deeper need for his own musical language. Pärt has said, "I was left completely naked. It was like turning a new page in my life, or in music at least. It was a decision, a conviction in something very significant — that in order to be born for the new, you have to die for the past. All ideals must be re-evaluated."

This process of re-evaluation had already begun sometime earlier in the composer's spiritual search, through which he found his belief and joined the Orthodox Church. Those eight years of creative crisis were full of new ideas and experiments but also disappointment and growing frustration. Commenting on this, Pärt has said, "I didn't know at the time whether I was going to be able to compose at all in the future. Those years of study were no conscious break but an agonising inner conflict between life and death. I had lost my inner compass, and I no longer knew what an interval or a key was."

These sufferings are documented in Pärt's so-called musical diaries, which he started using in 1974 to write down both his musical and verbal ideas. From these pages we see also how the composer has drawn inspiration from many things, like Gregorian chant and early polyphony, scripture, and prayers.

Pärt found a long-sought musical language of his own in February 1976 with the short piano piece "Für Alina". Over the next two years, he composed an abundance of new works, including "Cantus in Memory of Benjamin Britten", "Tabula rasa", "Fratres", "Spiegel im Spiegel", and others. He had finally created his own unique compositional technique. He would call it *tintinnabuli,* and it has been the basis of his musical style until today.

The years of emigration and the return home

In 1980, Arvo Pärt and his family were forced to leave Estonia, initially emigrating to Vienna and later to Berlin. This marked the beginning of almost a decade during which performances of his music were banned in Estonia and throughout the Soviet Union. Meanwhile, in Germany, Pärt began his longstanding collaboration with producer Manfred Eicher, and in 1984, ECM Records released their first joint recording, "Tabula rasa". Since then, all the most significant albums of Pärt's music have been released under the ECM label, and his works have been performed and recorded by the finest orchestras and interpreters of our time.

Around the time of Estonia's restoration of independence in 1991, Pärt reconnected with his homeland and its musical life, returning to live permanently in Estonia in 2010. That same year, the Arvo Pärt Centre and personal archive was established in Laulasmaa by the composer's family.

Photo by Estonian Children's Literature Centre



In the spring of 2025, Estonia was the Guest of Honour at the Bologna Children´s Book Fair, the oldest and largest children's literature event in the world. This constituted a rare opportunity to exhibit Estonian authors' and illustrators' work on such a grand scale and garner significant international attention

Year of the Estonian Book 2025

2025 marks 500 years since the publication of the oldest printed word in Estonian – in 1525, a work came out of the printing press that contained text in the Estonian language, among other things. No copies of the book have survived, only fragments, but researchers are quite certain that the first known printed text in Estonian was contained within its covers. This is where the story of the Estonian-language book begins.

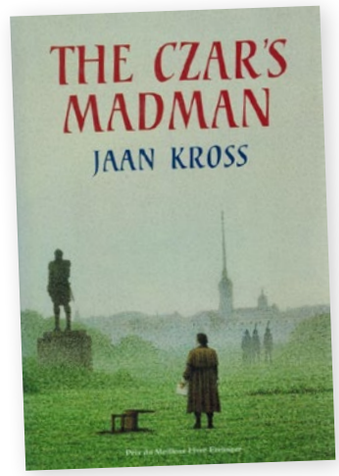


Photo by Raigo Pajula

The patron of the Year of the Estonian Book 2025, **President Alar Karis**, upon assuming the role said: "Estonians have grown up with books and written language. By the 19th century, over 90 percent of Estonians were literate, and literary figures were the founders of our nation and identity, as well as pioneers of the Song Festival tradition. Therefore, the 500th anniversary of the Estonian book is a significant milestone for our people and country."

President Lennart Meri once said that if the Estonian book had not been born in 1525, statistically speaking, we could have ended up as Germans, Swedes, or Russians. This sentiment is reflected in the motto chosen for the Year of the Estonian Book 2025: a line from Hando Runnel's poetry, **"A nation begins with a book".**

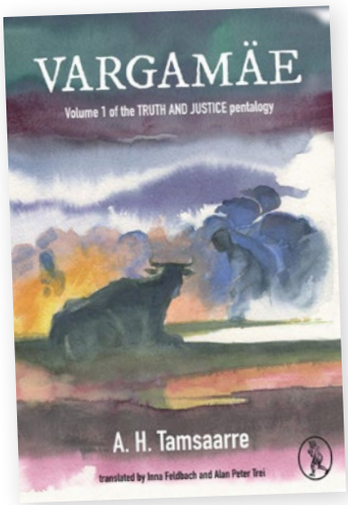
"Life in Estonia" asked the **President's Book Club** and the **Estonian Literature Centre** (www.estlit.ee) for book recommendations for our readers who want to get acquainted with Estonian literature, and the following selection was suggested. There are novels, a crime story, a poetry book, a graphic novel, and children's stories, but they are all quintessentially Estonian. All these books can be purchased on Amazon.



The Czar's Madman

by Jaan Kross
Translated by Anselm Hollo

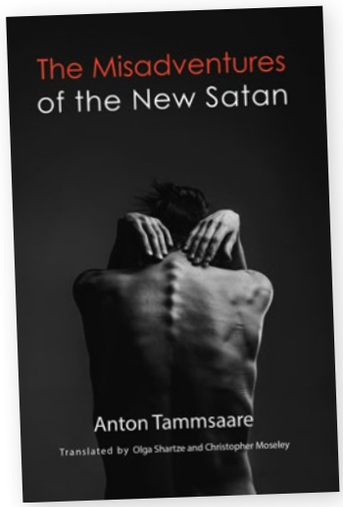
This historical novel is about a Livonian nobleman, Timotheus von Bock, who has married a peasant girl named Eeva to prove to everyone that good men are equal before nature, God and ideals. Eeva's brother Jakob analyses von Bock's life throughout his journal and tries to figure out if the nobleman is truly mad as everyone seems to believe. *The Czar's Madman* is arguably one of the most well-known Estonian novels in the world.



Vargamäe
Vol 1 of the Truth and Justice pentalogy

by A. H. Tammsaare
Translated by Inna Feldbach and Alan Peter Trei

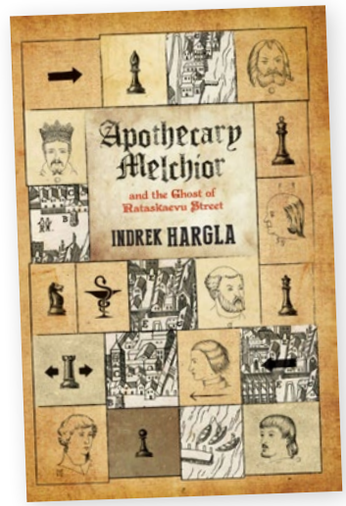
Andres, an Estonian peasant, purchases a small holding in a marshy part of the country. The family leads a life of struggle and gradually lifts itself out of extreme poverty. The monumental 5-volume epic tells the story of how Tsarist Estonia developed into the First Republic through the experiences of a family, and particularly the partly autobiographical character of Indrek, who ceases working on the land to get an education at the end of this volume.



The Misadventures of the New Satan

by A. H. Tammsaare
Translated by Christopher Moseley and Olga Shartze

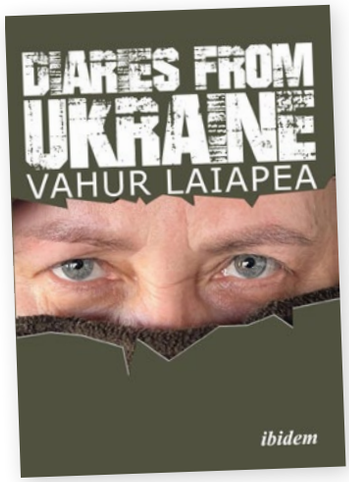
Satan is given the chance to ensure the survival of hell if he agrees to live a righteous life on Earth as a human being. He ends up living as Jürka, a great bear of a man, as a tenant in a run-down Estonian farm. His patience is sorely tested by his scheming, unscrupulous landlord and the social and religious hypocrisy he encounters. The novel explores an unsolvable problem at its core: how to live rightly — or, in other words, how to attain bliss?



Apothecary Melchior and the Ghost of Rataskaevu Street

by Indrek Hargla
Translated by Christopher Moseley

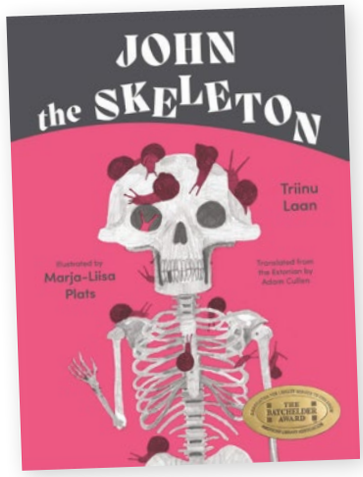
Tallinn, 1419. What links the Keeper of the Tower, a prostitute, and a Flemish painter to a haunted house on Rataskaevu Street? All three claim to have seen a ghost near the house, and each is found dead soon afterwards. Melchior Wakenstede, apothecary and assistant bailiff, is charged with unearthing the truth. As he becomes embroiled in the conflicts and rivalries between religious orders, merchant guilds, and Teutonic Knights, what he discovers is more incredible and more terrible than any ghost.



Diaries from Ukraine

by Vahur Laiapea
Translated by Ott Palumäe and Tiia Palumäe

War needs statistics. Numerical data on enemy casualties, equipment, losses, and victories. But only those who come very close to it understand the nature of war. Only those and anyone who goes off to war themselves. War mercilessly exposes one's innermost depths. The author went to meet people who are deeply affected by Russia's aggression in Ukraine, whose loved ones it kills and maims, whose souls are left with scars that will never completely heal.

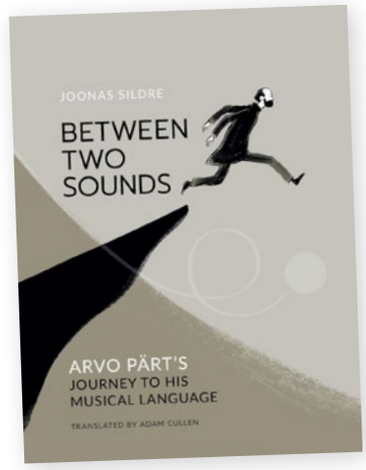


John the Skeleton

by Triinu Laan
Translated by Adam Cullen
Illustrations by Marja-Liisa Plats

For this newly retired classroom skeleton, life is just beginning. When Gramps and Grams bring John to their farm deep in the woods of southern Estonia, each day becomes a new adventure: rescuing snails, making snow angels, even sitting in a closet at an art exhibit.

2025 Mildred L. Batchelder Award Winner
2025 USBBY Outstanding International Book
2022 Bologna Children's Book Fair Illustrators Exhibition winner



Between Two Sounds: Arvo Pärt's Journey to His Musical Language

by Joonas Sildre
Translated by Adam Cullen

This graphic novel follows the life of world-famous composer Arvo Pärt from his birth in Estonia in 1935 through 1980, when the Soviets forced him to emigrate because of the nonconformist and religious nature of his music. Based on years of research and close collaboration with Arvo Pärt himself, Joonas Sildre paints an atmospheric portrait of a restless artist who does not shy away from confronting state control or his own internal contradictions.

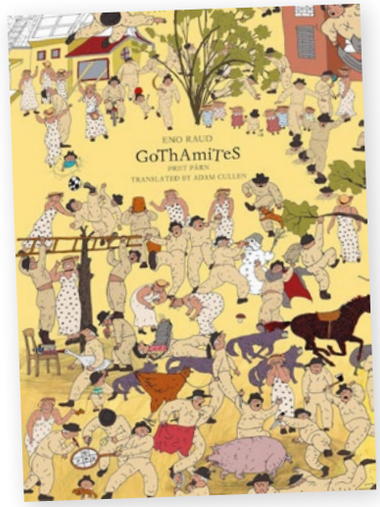
Winner of NPR Best Books of 2024
Gold Medal, 2024 PubWest Book Design Award



Days of Grace

selected poems by Doris Kareva
Translated by Miriam McIlfatrick-Ksenofotov

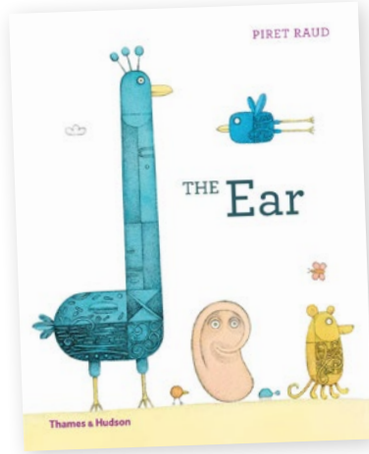
Doris Kareva is one of Estonia's leading poets, admired especially for poems that balance precision and control with passion and bravado. Such is the metaphysical sensitivity of her poetry that its moral charge is sensed almost physically. She has also been called "a priestess of love" who is fearless as well as discreet in her portrayal of love that is so "pure and elevating like mountain air" that she seems to be writing from another time or dimension.



The Gothamites

by Eno Raud
Illustrations by Priit Pärn
Translated by Adam Cullen

In a faraway land live a bright, industrious people called the Gothamites. They are known for being model citizens, so much so that other communities constantly call upon them for advice, leaving the Gothamites with no time for themselves. Fed up, they hit on a solution to become the most foolish people around — after all, no one wants foolish advice.



The Ear

by Piret Raud
Illustrations by Piret Raud

When Vincent van Gogh cuts off his ear, the ear is suddenly left alone and headless. What will become of her? Acutely aware of how small and insignificant she is in the big, wide world, the ear experiences something of an identity crisis. But thanks to a downcast frog with a heavy heart who simply needs listening to, she realises what she can offer to the world: a sympathetic ear.



Photo by Rauno Liivand

When the fates align

By Justin Petrone

5 acclaimed foreign chefs achieve culinary excellence in Estonia

Michael Holman

Photos by Mari Marta Makarov





An irresistible pull

Michael and **Hannah Holman** were not planning on relocating to Estonia. Michael, a half-Japanese Canadian, and Hannah, a native Californian, were living in Chicago when this woodsy country on the far side of the Baltic called out to them. They were plotting their next move after having worked together at Fäviken, a once extremely popular restaurant in the north of Sweden, when the idea presented itself via an old kitchen connection. Peeter Pihel, an Estonian chef and one of the founders of Fotografiska in Tallinn, had worked together with the Holmans at Fäviken. Through Peeter they had gained connections in Estonia. Over a breakfast of bacon and eggs at a greasy spoon diner in the Windy City, the Holmans decided, why not?

The Holmans now call Tallinn's Pelgulinn district home and are running Põhjala Tap Room, which serves American-style breakfasts and barbecue, as well SUMI, a Japanese-influenced restaurant with a French bakery up front that bustles in the mornings. And they have two small children, but with a hot cup of coffee and a few cremadettes, they are ready to spring into action.

"We work really closely with our teams, we're in early and out late," says Hannah. Hannah's team works diligently, ensuring that the execution of every cruller, croissant, and Paris-Brest is followed to the letter. "We're serious when we need to be," Hannah says. "When the work is being done, you can have a laugh, but when it's not being done, it's time to get back to work."

In a way, the Holmans are the internationals Estonia has craved to entice back. Back, in the sense, that Tallinn has always been international from its founding by German and Danish tradesmen in the 13th century. Still, it required some old-fashioned magic to pull in the Holmans.

"It's like a gravitational pull," says Hannah of the decision to move to Estonia. "The fates align."

Estonia, in return, has been good to its adventurous guests. They have tapped into a longing for new tastes. The Põhjala Tap Room breakfasts, served every weekend since 2019, were a hit. Hannah went from making 20 donuts to 200. By running open kitchens, the Holmans got to know their customers. Because of this, says Michael, they have not felt isolated here in Estonia.

"When you serve breakfast for seven years, you become part of the community," says Michael. "We have provided people with a place to go, to have a nice experience with their families," he says. "We never felt cut off working here because our jobs forced us to work in open kitchens."

Add to that a restaurant staff that is just as international – one of whom, a baker who only wears white, is known as 'the bread ninja' -- and you get a fully cosmopolitan experience. "I think the Estonians are refreshed by it," says Michael. "It's run like a place in Stockholm or Copenhagen."

At SUMI, which means 'charcoal' in Japanese, Michael offers up Japanese-influenced dishes. In addition to his heritage, Michael has also worked at kitchens in Kyoto. These experiences he combines with other tricks and techniques he's picked up along the way to deliver signature dishes like a smoked and grilled duck breast, served with potato and swede puree, yuzu kosho paste, brown butter soy sauce, and grilled padron pepper. "We've taken a very Japanese dish and used butter, which is not very Japanese, to hold the whole plate together," Michael says.

For the Holmans, honesty and integrity are core to everything they do at Põhjala and SUMI. They make their own bread, they make their own bacon, and, when possible, they use local products and produce. Michael says he is particularly impressed by the improved production of cheese, butter and meat in Estonia. Staying true to themselves is also on the menu as SUMI continues to pull in new clients. "People can sense authenticity," says Michael. "If you are being dishonest and trying to do something for flash, they can sense that you are not being genuine."



Matthias Diether







Photos by Lauri Laan

"I fell in love, completely"

It's about a 20-minute walk to get from SUMI to **180 Degrees**, a seven-year-old restaurant located in Noblessner, a residential and cultural seaside area that, in the waning days of the Russian Empire, hosted a submarine factory. It is here that **Matthias Diether** is seated at the bar of his restaurant 180 Degrees, preparing for another day and enjoying the lovely sea view.

"Noblessner is fantastic, for this kind of view, you need to pay a little more money," he says. "It has this kind of flair. When you are here in the summer, you could be somewhere in Spain."

Diether opened 180 Degrees in 2018 after more than two decades of international success as a chef. He was at the Ritz Carlton, Emirates Palace, and Shangri-La in Dubai for three years. He was the chef at the Turnberry Resort in Scotland for two. His restaurants have received a Michelin star eight times. His current venture, 180 Degrees, even has two of the coveted stars.

Born and raised in Germany, Matthias was the chef at a popular restaurant in Berlin when the owner changed the concept, and he decided to take a break. This didn't last long, because he got an unexpected phone call from a contact in Estonia urging him to visit. "I was surprised, because I never thought about the Baltics," recalls Matthias. He describes the Baltics as a sleepy corner of Europe that, outside of some war-related anxiety, doesn't generate a lot of headlines around the continent. "Nobody was talking about the Baltics in 2016," he says. Some family members had been to visit Tallinn though and they told him he must go and see it.

"They knew it was beautiful here and so I came," says Matthias. "I fell in love with this country, completely." After some time working at Alexander, a restaurant on the Estonian island of Muhu, as well as Alexander Chef's Table in Tallinn, Diether decided to strike out on his own and open "the best restaurant in Estonia." He came to Noblessner, which was still under construction, but saw the potential in the site. Eight months later, 180 Degrees opened its doors to guests.

Matthias describes his menu as modern European cuisine that integrates the techniques of French cooking. But he likes to keep his dishes diverse. "You will always find an Asian dish, a Mediterranean dish, a Nordic dish on my menus," he says. "You will never get bored here."

He sources as much produce as he can locally, especially dairy products, vegetables, and fruits though he admits that he does need to source meat and fish from providers outside Estonia.

Other than the thrill of running a kitchen, Matthias also likes the opportunity his job provides to meet new guests as they pass through the city. A lot of Germans come to Estonia to explore it. "Germans love the Baltics," says Matthias. "They love to come up here and travel around."

They also are partial to Estonian cuisine which is at times so similar to German food it's hard to see the difference. "The ingredients are very similar, we have the same sauerkraut," he says. "That was another reason why it was easy for me to come here. The food culture was similar."

But what does it take to run a successful restaurant in Tallinn? "Passion," says Matthias. "It's best when your hobby is also your job," he says. "And I love food. Any other job would be so boring."

Photos by Lauri Laan



Triinu Tapper and Radoslav Mitro





"It just felt like the right place"

Morel is a newer restaurant tucked away on Toom-Kuninga Street in Tallinn's Uus-Maailm or 'New World' neighbourhood. It opened its doors last year, offering up diverse but satisfying fare. It's the latest venture for owner and head chef **Radoslav Mitro**, who turned up in Estonia little over a decade ago and quickly made a name for himself as something of a celebrity chef. At least to the extent that he is known on a first-name basis, "Rado," which also happens to be the name of his other restaurant on Vene Street in the Old Town, as well as its satellite in Haapsalu.

"At Morel, we're doing more Mediterranean food with pasta," says Rado, of the restaurant, which opened up nine months ago. "Rado is some pasta, but we also serve offal," he says. Indeed, Rado has raised some eyebrows by putting bear and udder schnitzels on the menu.

The Rado in Haapsalu is "copy/paste" of Rado Tallinn, Rado says, and was opened in part because his partner Triinu Tapper has roots in the area. Rado met Triinu when they both worked at Ribe, a now defunct restaurant that was Rado's gateway to the Estonian hospitality business. Triinu's West Coast connections have come in handy in other ways. Her cousin is an organic farmer, and Rado's restaurants source their vegetables and eggs from Triinu's cousin's farm. Rado also connects with hunters in the winter in Estonia to put some game meat on the table. Venison, for example. And in general, he has favourable feelings about Estonian foods, partial to sprat sandwiches served on black bread in particular. Estonian bread is another local favourite.

"We just don't have black bread like this in Slovakia," he says, adding that German pumpernickel, the closest continental relative of Estonian black bread, doesn't come close.

"They have a lot of things here that I have never had before," Rado continues. "Trout caviar, salmon roe? Growing up in Slovakia, these are foods that I would have never eaten before."

Rado is from eastern Slovakia, and originally studied furniture restoration before he moved to the UK where he did all kinds of jobs to get by. He worked at an outdoors centre for children that offered climbing and canoeing activities and had no interest in the restaurant business until a friend offered him a gig as a dishwasher in a Spanish restaurant. "At first I hated it," he recalls. "It was December, so the peak season, we were so busy. I was dreaming about those orders."

But after a stint at an airline call centre, he began to yearn for the bustle of the kitchen. He put his head down and worked his way up the chain of command in the restaurant. When he relocated to Estonia -- he was in a relationship with an Estonian at the time -- he took on a job as Ribe's head chef. The rest of his story has been written in restaurant menus and reviews. When asked why he decided to stay in Estonia though, he also cites its inexplicable pull.

"It just felt like the right place," Rado says. "There was no promise of money or good weather."

Yet he stayed and has, over the past decade, cultivated food culture. He has also become a part of the local restaurant community. "Everybody knows everybody here," says Rado. Like Matthias, he also feels safe. "It's very quiet," says Rado. "I can even leave my keys in my car."







Cooking as play

While Rado is making the rounds at his restaurants, **Karoliina Jaakkola** is driving from Tallinn to Rapla, an Estonian town about an hour south of the capital. It is here that she is the head chef of **SOO,** a popular restaurant within the Maidla Nature Resort that last year received a green Michelin star. SOO, which means 'bog' or 'swamp' in Estonian, draws its inspiration from its lush natural surroundings and relies on fresh regional produce.

"I like to think that I create something quite unique, something that honours the seasons and nature around us, bringing in the best of what we can find all around," says Karoliina. Estonia, especially during the summer, has a lot to offer. "It has so many beautiful ingredients," she says. "It would be rather wasteful not to use them."

In this way vegetables, berries, mushrooms from the area find their way onto SOO's menu.

"It's a very sustainable way of gathering ingredients," says Karoliina. In the spring, the whole restaurant team also participates in gardening on the restaurant premises, so that they can grow edible flowers and herbs for use in the kitchen. At SOO, Karoliina has developed her own signature dishes, which she has dubbed "SOO cuisine." She combines local foods with foreign spices. "I might use local quail, but pair it with black cardamom," says Karoliina. "I like to have a little playfulness in the creation," she says.

Photo by Elena Kovpak

Karoliina Jaakkola

Photos by Iris Kivisalu





For Karoliina, who grew up in southern Finland, cooking is just another artistic pursuit. Originally she was an athlete and thought of becoming a gym teacher, but some injuries nixed that dream. Instead she looked to apply her own creative energies in the kitchen. She also happens to have some chefs in the family, and so decided to go into food. "People always need to eat," she says. "I applied to a culinary school and have never looked back since."

Karoliina came to Estonia after serving as a chef de partie at Inari, a one Michelin star restaurant in Helsinki. In Tallinn, she held the same role at a pop-up restaurant that was successful enough that it led to a series of consulting projects and, eventually, the invitation to take over the kitchen of SOO. She moved to Tallinn in 2023 fulltime and continues to commute between the capital city and Rapla.

"I enjoy living in Tallinn," says Karoliina. "I get to combine the charm of the city with the serenity of the countryside by living in the city and working in the middle of the forest," Karoliina remarks. "I find this to be a very peaceful combination."



She also doesn't mind having Estonian food for dinner, when she's in the mood. In a way, it reminds her of home. "I think Estonian food has a lot of similar flavours and textures to Finnish food," says Karoliina. "I can't think of anything that I have tried and didn't enjoy," she says. Some of her favourite Estonian foods are *seljanka* (Estonian style *solyanka*), a rich soup, as well as *verivorst*, or blood sausage.

Adapting to Estonia hasn't been tough, though getting by in Estonian, which is similar but not entirely mutually intelligible with Finnish, can be a challenge. "I can understand the main points of the conversation but I reply on a level of a three-year-old, and that can be tricky in some situations," says Karoliina. "I am learning it but it's happening a little too slowly for my taste!"



Photo by Mae Rae

Ingredients:
1 kg peeled potatoes
2 dl pearl barley
1.5 l water
salt
2 onions
200 g pork knuckle

Place sliced potatoes in a pot and pour pre-soaked barley on top. After adding a bit of salt, boil or stew the ingredients until soft. Mix them, avoiding mashing the potatoes. Serve with salted pan-fried pork knuckle and chopped onion.

Mulgi porridge

Last December, the United Nations Educational, Scientific, and Cultural Organisation (UNESCO) decided to add cooking and eating Mulgi porridge (*mulgipuder*) to its Representative List of the Intangible Cultural Heritage of Humanity.

The list was created in 2008 to better protect traditions, including cuisines, and to raise awareness of them.

Mulgi porridge is a traditional dish from south Estonia consisting of mashed potatoes and barley, often topped with fried pork and sautéed onions. While a simple dish, it's universally appreciated by the four chefs interviewed. Some of them have even put it on the menu from time to time.

"We did it with high-quality ingredients from our kitchen," says Michael Holman, the head chef at SUMI. "Salted pork, barley, potatoes? It's peasant food but it's good. It's a very savoury thing."

Rado Mitro, head chef at Rado and Morel, agrees. "It's a workman's meal and I like it," he says. "I think it's very tasty and simple. I enjoy simple food," he adds. In addition to mulgi porridge, Rado also likes to tuck into *ühepajatoit*, a vegetable and meat stew, and orders pork chops and potatoes when he eats out.

For 180 Degrees' Matthias Diether as well as SOO's Karoliina Jaakkola, mulgi porridge tastes a little like home. "I love it," says Matthias. "For Germans, anything with potatoes and some pork is just lovely," he says. "I've had this dish before," adds Karoliina. "It was great, creamy and fatty, and I'm in general a big fan of potatoes and barley," she says. "It was a lovely experience."



Photo by Priidu Saart

There's no Eiffel Tower, except for a homemade replica on Hiiumaa. No mountains, either, and our summers aren't known to be sweltering.

So what does Estonia have? Space to rest, relax, and recharge. You shouldn't need a holiday to recover from going on holiday. This is why Estonia is perfect for "calmcations" — time away to protect your peace of mind from the demands of daily life.

In defence of peace & quiet

Estonia's top destinations for a "calmcation"

By Hillary Millán

Take a break in Tallinn

Tallinn has a bit more hustle and bustle during the summer, especially this year when Estonians from all ends of the earth gather for the Song and Dance Celebration. Yet many visitors don't go beyond the cobblestoned streets of the Old Town. Take a page from the book of French flâneurs and stretch your legs in neighbourhoods and natural areas outside the city centre.



Photo by Thomas Lotter

Urban oases

The Japanese may have given it the fancy name of "forest bathing" — for Estonians, a trip to the forest is just something you do, like going to grandma's house on the weekend. Locals have understood the unparalleled power of nature to help and heal for centuries. You don't even have to leave the city, as urban green space abounds in Tallinn.

Check out Kadriorg Park for a more polished natural experience. The well-tended gardens around Kadriorg Palace are sure to spark joy, and careful observers may spot a red squirrel or two scampering up the towering oak and chestnut trees.

Paljassaare Peninsula is more wild. Located a mere 6 kilometres from the city centre, this coastal area was off-limits to Tallinners during the Soviet occupation. Now, it is a nature preserve and a favourite of migrating birds. You can always find a spot on the beach for sunbathing, and during the off-season, you may have the sand all to yourself!

Sea swimming and sauna

To calm a feisty toddler, many parents know to "just add water". A splash in the tub can turn a tantrum into playtime. It turns out that it works for grownups, too. A long bath is relaxing, but a dip in the sea does wonders for the soul. This is why Estonians do it year-round! Ease your way into the Baltic at the Iglupark igloo saunas in Noblessner. Heat up in the sauna, climb down a ladder into the sea, and repeat as often as you'd like!

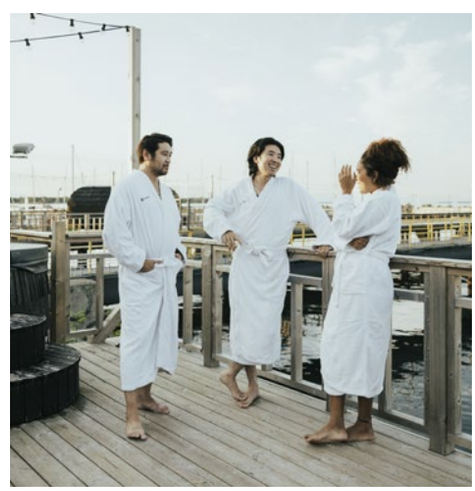


Photo by Rasmus Jurkatam

These day trips from Tallinn will help you achieve serenity in all seasons

Spring

Canoeing in Kõrvemaa: Go when the water levels are high during the spring thaw to explore areas that are inaccessible during other seasons.



Photo by Silver Gutmann

Summer

Rummu Quarry SUP board trip: Float on crystal clear, turquoise water and glide over a submerged forest in an otherworldly post-industrial setting.

Autumn

Day hike and spa: Start at Keila Waterfall and bask in the colours of the season. Hike the Baltic Coastal Trail to Laulasmaa. Then soothe your sore muscles at LaSpa Hotel & Spa.

Winter

Snowshoe in Viru Bog: The only sound you'll hear is your own breathing and the crunch of the snow underfoot. End with a campfire and a cup of hot tea.



Photo by Elen Juurma

Island hopping

Saaremaa

A hop, skip, and 40-minute flight from Tallinn takes you to Kuressaare, the capital of Saaremaa, Estonia's largest island.

To while away a few days in town, you can linger over the catch of the day at Ku-Kuu Fish Restaurant overlooking the impressive Kuressaare Episcopal Castle, and maybe play a round or two at Saare Golf.

Retreat to the western end of the island to explore Vilsandi National Park, one of 6 national parks in Estonia. Afterwards, check in and check out at the eco-friendly Pilguse Hotel and Residency.

Photo by Robert Lindström





Photo by Hillary Millán

Photo by Marko Palm



Photo by Pridu Saart



Kihnu

If you visit when the lilacs bloom (around the end of May), add "stop and smell the flowers" to your itinerary. Lilacs are everywhere — on the beach, lining the roads, and surrounding homes like a sweet-smelling fence. The tiny blossoms will remind you to slow down and appreciate the island's beauty.

Make your visit more sustainable by staying overnight and eating locally; a trip to Kihnu would not be complete without trying freshly smoked fish — caught in the morning, smoked during the day, and enjoyed in the evening with a slice of hearty black bread. Supporting Kihnu's entrepreneurs means you'll be helping them protect their unique way of life.

Aegna

When you drop anchor in Aegna, you'll feel as if you've been magically transported to another world. Technically, though, you'll have never left Tallinn.

When World War I began, all the island's inhabitants were evacuated, and it became a military base. It wasn't until 1991 that the island was opened to visitors. Like the nearby island of Naissaar, Aegna is designated as a landscape conservation area.

Hiking trails go past massive boulders and an ancient cemetery, and a flock of sheep maintains the island meadows in summer. Turn off your phone, settle down on the sand, and wonder why you didn't visit sooner.

Photo by Simo Sepp



Stop time in these small towns



Photo by Rivo Veber

Haapsalu

Once a summer destination favored by Russian monarchs and celebrities, Haapsalu enchants visitors with its fresh sea air, waterfront promenade, and castle ruins.

Mud from the bay has been used in medicinal treatments in Haapsalu since 1825, when the first mud therapy resort opened. Discover its healing properties and enjoy gorgeous sea views at Fra Mare Thalasso or Hestia Hotel Haapsalu SPA.



Photo by Ken Oja

Viljandi

This town of about 17 000 people is only two hours from Tallinn by train. The city is not known for its nightlife, but it does have relaxed vibes, creative-minded people, and enough to keep you busy (but not too busy).

Viljandi's castle ruins provide a romantic backdrop to popular events like the Viljandi Folk Festival. They sit atop a hill overlooking Lake Viljandi. Take in the view and feel your heart rate slow. Be warned — you may be overcome with the desire to change your flight home and stay in Estonia just a little bit longer.



Photo by Siim Verner Teder

Photo by Visit Viljandi



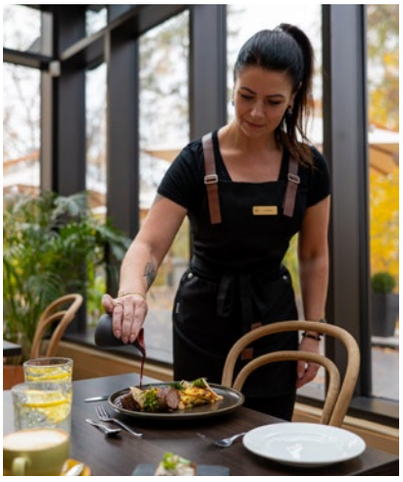


Photo by Kristjan Kivistik

A recent **Esquire** article called Estonia **"Clean, green, and serene."** We have the receipts.

Breathe easy

Estonia was only one of 12 countries in the world to meet the WHO's clean air standards in 2024.

So fresh and so clean

Estonia ranked first in the 2024 Environmental Performance Index.

Room to move

Estonia has about 31 people per square kilometre, making it one of Europe's least densely populated countries.

Events calendar: Highlights from June to December

Life in Estonia recommends

Photo by Adam Illingworth



Tartu Rattaralli
1st of June @ Tartu

For over 40 years, Tartu Rattaralli has brought thousands of cyclists to Estonia each year. The race route offers the scenic and diverse landscapes of southern Estonia. The longest distance, 126 km, is part of the UCI Gran Fondo World Series, and the event also hosts the world's largest children's cycling races, creating a true festival for all ages.

tartumaraton.ee/en/tartu-rattaralli-2025
tartumaraton
tartumaraton

Photo by Joosep Kivimäe

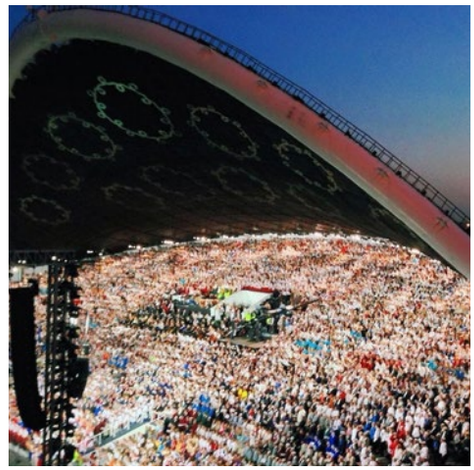


Tallinn Craft Beer Weekend
13th — 14th of June @ Kultuurikatel

This is the biggest international craft beer festival in the Baltic region for beer lovers who look for new and interesting taste and aroma experiences. Each brewery showcases several world-class beers. This means guests can try out more than 400 different beers in 2 days. The festival's ticket allows you to taste them all.

www.tcbw.ee
tallinncraftbeer

Photo by Visit Estonia



XXVIII Song Celebration and XXI Dance Celebration "Iseoma"
3rd — 6th of July 2025 @ Tallinn

Estonia's song and dance festival tradition has been included in the UNESCO intangible cultural heritage list. The festival is more than just a summer event that takes place every five years; it is a way of life as it embodies all the values that Estonians consider important as a nation — love for the country, language, culture, and customs. Nearly 10 000 dancers and 40 000 singers attend this event, which gathers an audience of about 100 000 people.

2025.laulupidu.ee/en
laulutantsupidu
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Photo by Mait Jüriado



Events calendar

Photo by Rauno Liivand



Beach Grind
11th — 13th of July 2025
@ Pärnu Beach Park

The eagerly anticipated electronic music festival Beach Grind returns to Pärnu! Guests have the opportunity to experience performances across three stages. The festival will feature headliners such as Wiz Khalifa (USA), Lost Frequencies (BEL), Elderbrook (UK), Sub Focus (UK), Salvatore Ganacci + Tommy Cash (SWE/EE), Nublu (EE), Chris Avantgarde (GER), Camo & Krooked (AUT), and many other prominent artists from both local and international scenes.

beachgrind.ee
iLoveGrind
welovegrind
@welovegrind

Photo by Priidu Saart



I Land Sound
17th — 20th of July
@ Orissaare, Illiku islet

The purpose of this exciting festival is to enjoy everything that beautiful nature, great music and art, friends, and the Estonian summer have to offer. Islanders are known for sticking together and I Land Sound is no exception — electronic nightlife pioneers, artists, and the locals join forces for an enriching event.

ilandsound.ee
ilandsoundfestival

Photo by Pärnu Music Festival



Pärnu Music Festival
CREDO/ ARVO PÄRT 90
16th — 26th of July @ Pärnu

The 15th Pärnu Music Festival pays tribute to the Estonian composer Arvo Pärt on his 90th birthday. Neeme Järvi will conduct the opening concert, performing Pärt's *Cantus in Memory of Benjamin Britten*, Kristjan Järvi and Nordic Pulse will give a concert inspired by Pärt's music, and Paavo Järvi will conduct the Estonian Festival Orchestra in four concerts, including a performance of Pärt's *Credo*, which provoked the Soviet regime when conducted by Neeme Järvi in 1968.

parnumusicfestival.ee
Pärnu Music Festival
@parnumusicfestival

Photo by Eesti Kontsert



Saaremaa Opera Festival
22nd — 27th of July @ Kuressaare

For Saaremaa Opera Festival, an opera house is erected in the historical courtyard of Kuressaare Castle, seating up to 2000 people. In 2025, the featured guest will be the Daegu Opera House from South Korea, performing such operas as *Sim Tjong* by Isang Yun, *Orpheus and Eurydice* by Gluck and *Madama Butterfly* by Puccini. In addition, there will be a grand opera gala and a Korean dance gala, allowing visitors to experience the full beauty and diversity of Korean culture.

saaremaaopera.com
saaremaaopera
saaremaaopera

Photo by Martti Volt



FIA ERC Delfi Rally Estonia 17th — 20th of July @ Tartu and southern Estonia

Once again, the world's top rally drivers will compete on the windy roads of southern Estonia. The start and finish podium, along with a diverse entertainment programme, will be in Tartu Town Hall Square, and the race route will once again include the fast technical gravel roads of the Lake Peipus area.

rallyestonia.com
rallyestonia
rallyestonia

Photo by Silver Raidla



Bluesfest Augustibluus 1st — 3rd of August @ Haapsalu

The main stage for this event is nestled in the beautiful surroundings of the ancient Haapsalu Episcopal Castle, featuring big names from the United States — the cradle of blues — as well as European acts and exciting projects from local performers. The daily programme offers workshops, exhibitions, and traditional acoustic concerts in the old railway station. Music can also be enjoyed in the streets and open-air cafes.

augustibluus.ee
Augustibluus
augustibluus

Photo by Peeter Paaver



Viljandi Folk Music Festival 24th — 27th of July @ Viljandi

This festival takes place every July in the castle park and centre of Viljandi. It is one of the largest festivals of its kind in the Baltic and Nordic region. It is the strongest expression of a special mindset that values tradition, heritage, and a local identity — it keeps the traditions alive and strengthens our national characteristics.

viljandifolk.ee
Viljandi.parimusmuusika.festival
viljandifolk

Photo by Harri H. Sundell



Seto Kingdom Day 2nd of August @ Saatse village, Setomaa

The Setos are an ethnic group of Estonians whose traditional territories are in south-eastern Estonia. On Seto Kingdom Day, the Setos decide who will be the earthly representative of the mythical King Peko for the next year. Also on this day, the Setos show off their skills in Seto Seto folk singing (known as *leelo*), playing instruments, and dancing. The best artisans, and food and beverage makers are determined, as is the strongest Seto.

visitsetomaa.ee/en
visitsetomaa

Events calendar

Photo by Tartuff



Tartu Love Film Festival "Tartuff" 4th — 9th of August @ Tartu Town Hall Square

Tartuff is a unique outdoor film festival taking place in Tartu, the second-biggest city in Estonia. Located in the heart of the Old Town, the festival screens a diverse selection of genre and documentary films, focusing on the many facets of love. All films are screened free of charge.

tartuff.ee
festivaltartuff

Photo by Ironman Tallinn



Ironman Tallinn 23rd — 24th of August @ Tallinn

Over the years, the Ironman competition, which runs through the picturesque Old Town of Tallinn and the wonderful surrounding Harju County, has attracted almost a thousand participants from different countries around the world to compete in Estonia. The Ironman triathlon festival also includes an Ironkids competition and a series of charity races. A sporty weekend offers entertainment for sports fans of all ages!

Ironman.com
Ironman Estonia
ironman_estonia

Photo by Tallinn Marathon



Tallinn Marathon 12th — 14th of September @ Tallinn

Tallinn Marathon is the biggest international running event in Estonia. The event attracts thousands of runners and includes a classic marathon, a relay marathon, a half marathon, the Tallinn Autumn Run 10 km, the Nike Youth Run 5 km, a welcome run, and children's races. The Tallinn Marathon start—finish area is located on the edge of Tallinn's Old Town, a UNESCO World Heritage Site.

tallinnmarathon.ee
Tallinn Marathon

Photo by PÖFF



Black Nights Film Festival (PÖFF) 7th — 23rd of November @ Tallinn and Tartu

PÖFF is an annual A-category film festival that has been held in Tallinn since 1997. In November each year, it brings the newest and most fascinating examples of the world's cinematography, together with international filmmakers, to the doorstep of local viewers. With over 500 feature films, short films, and animations, and with around 1400 film professionals and journalists in attendance, plus more than 90 000 viewers, PÖFF is one of the biggest film festivals in northern Europe and the largest annual cultural event in Estonia.

poff.ee
tallinnblacknightsff
tallinnblacknightsff

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Toompea 8b, Tallinn, Estonia
@vabamu I Vabamu.ee/en

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