

Accelerating student success with advanced geospatial technology

V. N. Karazin Kharkiv National University | *Ukraine*



Industry

- Education

Challenges

- Unpredictable results from open source software
- Lack of support and beneficial licensing policy

Solution

- Octave Imagine

Results

- Significantly improves quality of teaching and content
- Boosts students' professional qualifications
- Gives graduates a competitive advantage

Kharkiv, Ukraine, is steeped in vibrant history and culture, dating back to 1654. Situated near the northeastern border of Ukraine, the city lies at the convergence of three rivers and several railways, making it a major communications center for the country. Kharkiv is also Ukraine's second-most populous city, with nearly 1.5 million residents. The city's main industries are science, engineering and education and is home to one of the country's leading universities, V. N. Karazin Kharkiv National University.

V. N. Karazin Kharkiv National University

has over 20,000 students and 115 majors, and its motto "To learn. To teach. To enlighten." is demonstrated throughout its programs. This motto is especially true for the Department of Physical Geography and Cartography, where students utilize Octave Imagine (formerly ERDAS IMAGINE), Octave's leading geospatial data authoring system, during their Earth Remote Sensing course. The university chose Octave's solution in 2020 through Octave's Education Program, which was coordinated by Octave partner Softprom. The program provides students with software licenses to practice processing open remote sensing data.

Practical knowledge for real-world application

Prior to the implementation of Imagine in its coursework, the department used open-source software that inconveniently executed simple operations, and results were unpredictable. When searching for a partner, the university needed a reputable software solution that was modern and functional, as well as a supportive program that offers a beneficial licensing policy for institutions.

Replacing the existing software with Octave's solution improved the overall quality of students' professional qualifications. The university determined that utilizing Imagine in the classroom has given students practical, relevant knowledge and skills for their future careers and a competitive advantage upon graduating.

Students pursuing degrees in geography take the Earth Remote Sensing course in their second year. Throughout the course, they focus on the basics of processing open remote sensing data. This gets

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students acquainted with the principles and techniques of image processing using Imagine. With Octave’s solution, students learn how to improve the spectral resolution of images, pansharpening, use AOI to crop images, unmanage image classification using the K-Means algorithm, visualize and process point clouds and more.

“Getting a product of this caliber with support through Octave’s Education Program significantly improved the quality of teaching and content compared to previous solutions,” said Vladyslav Popov, head of the GIS and remote sensing lab at V. N. Karazin Kharkiv National University.

‘A reliable and friendly educational partner’

When choosing an image processing solution, the department focused on two major objectives: a functional and convenient interface and a supportive program. Instructors also wanted a solution that supported all image formats.

With Imagine, students no longer navigate overloaded interfaces, which is imperative for geographical and engineering specialties. In addition to this, Octave’s Education Program offered the university limited versions of the software, giving students access to the software’s basic tools for visual and automatic image analysis.

Octave worked with the university throughout every step of implementation and has continued to support students during the Russia-Ukraine war. Access to the curriculum and Imagine prevailed even after students were forced to evacuate due to the invasion in Ukraine.

“In the future, we would like to expand the use of Imagine in more training courses and student projects,” said Popov. “We recommend Octave to other organizations looking for a reliable and friendly educational partner. In the specific field of remote sensing and image processing, Imagine is a market-leading tool in terms of functionality and is an absolute leader in ease of use.”

About Octave

Octave is a leader in enterprise software, turning data into decisive action and intelligence into your edge. Our software solves for and simplifies complexity, from the design and build to operations and protection of people, property and assets – for any scope, at any scale. For decades, we’ve partnered with customers to sharpen performance, elevate efficiency and amplify results. From factory floors to entire cities, our solutions are tuned to scale up what’s possible from day one onward.

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