iMagine

Imaging data and services for aquatic science

iMagine provides a portfolio of free at the point of use image datasets, high-performance image analysis tools empowered with Artificial Intelligence (AI), and Best Practice documents for scientific image analysis. These services and materials enable better and more efficient processing and analysis of imaging data in marine and freshwater research, accelerating our scientific insights about processes and measures relevant for healthy oceans, seas, coastal and inland waters.

By building on the computing platform of the European Open Science Cloud (EOSC) the project delivers a generic framework for AI model development, training, and deployment, which can be adopted by researchers for refining their AI-based applications for water pollution mitigation, biodiversity and ecosystem studies, climate change analysis and beach monitoring, but also for developing and optimising other AI-based applications in this field.

The iMagine compute layer consists of providers from the pan-European EGI federation infrastructure, collectively offering over 132,000 GPU-hours, 6,000,000 CPU-hours and 1500 TB-month for image hosting and processing. The iMagine AI framework offers neural networks, parallel post-processing of very large data, and analysis of massive online data streams in distributed environments. 13 RIs will share over 9 million images and 8 AI-powered applications through the framework. Having representatives so many RIs and IT experts, developing a portfolio of eye-catching image processing services together will also give rise to Best Practices. The synergies between aquatic use cases will lead to common solutions in data management, quality control, performance, integration, provenance, and FAIRness, contributing to harmonisation across RIs and providing input for the iMagine Best Practice guidelines. The project results will be integrated into and will bring important contributions from RIs and e-infrastructures to EOSC and AI4EU.

https://imagine-ai.eu