

# LIGHTHOUSE

Thinking Ahead. Staying One Step Ahead.

# PhD OPPORTUNITY 3D ONLINE VISUALIZATION

**"Development of Innovative Approaches for the 3D Online Visualization of High-Resolution Bathymetric Data Acquired through ROV"** at the University of Ferrara in collaboration with Lighthouse SpA.

## Post Content



The University of Ferrara in partnership with Lighthouse SpA announces an open position for a PhD candidate focused on the "Development of Innovative Approaches for the 3D Online Visualization of High-Resolution Bathymetric Data Acquired through ROV"

This game-changing research project aims to enhance the accessibility and efficiency of managing and visualizing marine data. In the era where an in-depth understanding of seafloors is crucial, easy access to high-resolution 3D data becomes paramount.

## As part of the project, you will work on.



- Overcoming the limitations of traditional GIS software with innovative techniques and multi-platform software solutions.
- The integration and customization of Mapbox and Plotly Dash, industry-leading tools for geospatial applications and creating web applications.
- Developing a method for compressing .xtf files and innovative pyramid resolution techniques for online geodatabase consultation.



The ultimate goal of this research is to create web apps for viewing dynamic spatial resolution DEMs compatible with mobile devices, making 3D models accessible to a wide audience. You will be encouraged to optimize visualization and rendering of 3D models, leading to a seamless user experience and accelerating digital transformation in the field of geoinformation.

Required Skills & Experience

### Technical Skills



- Experience with GIS software: applicants should have previous experience working with GIS software and a good understanding of their limitations.
- Proficiency in using Mapbox and Plotly Dash: familiarity with these geospatial and web application tools will be highly beneficial for the role.
- Data Management: experience in managing and manipulating large and complex datasets is crucial.
- Programming skills: knowledge of programming languages used for data analysis and visualization such as Python, JavaScript or R would be advantageous.

### Soft Skills



- Problem-solving and Attention to Detail: this role requires a proactive approach to identifying and overcoming challenges. Given the high-resolution nature of the data involved, the candidate must also demonstrate precision and a keen eye for detail.
- Effective Communication and Teamwork: candidates must be able to communicate clearly in English and work effectively within diverse teams, as the research will be conducted in collaboration with both the University and Lighthouse SpA.
- Adaptability and Flexibility: in a role that involves frequent travel, often onboard oceanographic ships, candidates must demonstrate the ability to adapt to changing environments, learn new software quickly, and maintain flexibility under varying conditions.
- Commitment and Availability: candidates must demonstrate a strong dedication to adhering to mandates and schedules set by both the University and the Company, with a primary focus on coding activities.

Please apply here: [https://www.fe.infn.it/radioactivity/join\\_us\\_form.html](https://www.fe.infn.it/radioactivity/join_us_form.html) or alternatively send your CV to [radioactivity@fe.infn.it](mailto:radioactivity@fe.infn.it)