Remote strategies for fossil finding: multispectral images and species distributional modelling applications for large-scale palaeontological surveys.

Fact Sheet

Project Information

**RE FIND**
Grant agreement ID: 785821

**DOI**
10.3030/785821

**Funded under**
EXCELLENT SCIENCE - Marie Skłodowska-Curie Actions

**Total cost**
€ 262,269,00

**EU contribution**
€ 262,269,00

**Coordinated by**
UNIVERSITA CA’ FOSCARI VENEZIA

**Italy**

**Start date**
1 September 2018

**End date**
18 January 2023

Objective

The REFIND project aims to create a standardized methodology for large-scale palaeontological surveys. The protocol will be applied to the recovery of single exposed fossils, by comparing high-resolution multispectral images with the
response of fossils to laboratory-light wavelengths. Where fossils cannot be directly detectable, my method applies the use of GIS spatial analyses to the palaeogeographical distribution of species, filtered with biotic and abiotic data, to recognize suitable areas for new fossil localities. Images will be acquired by multispectral sensors placed on satellites and drones, and predictions will be computed using softwares for spatial raster analyses. Results will consist of thematic maps predicting the location of new exposed fossils and sites, and coordinates will be partially verified through field expeditions.

The proposed software tools are available to the large public only since recent years, and their application is now crucially important for preventing the destruction of undiscovered palaeontological heritage by humans and climate changes. The REFIND project will allow researchers to minimize costs and risks related to field research, and to access the first Fossil Endmember Library and to the largest database for Late Pleistocene fossil evidence.

The implementation of my results will change the approach of European researchers to palaeontological field work and add to the importance of the European historical fossil collections.

I have previous experience in both fields developed in the REFIND project, being developed in the project, allowing me to achieve of all the proposed results. The acquisition of new skills during the fellowship will significantly upgrade my career potential, because multispectral and raster analyses, cutting-edge studies in Europe, have never been applied to palaeontology for such innovative goals. For the same reason, high interest is expected from the research community.

### Fields of science

- natural sciences > computer and information sciences > software
- natural sciences > computer and information sciences > databases
- engineering and technology > mechanical engineering > vehicle engineering > aerospace engineering > satellite technology
- engineering and technology > electrical engineering, electronic engineering, information engineering > electronic engineering > robotics > autonomous robots > drones
- natural sciences > earth and related environmental sciences > palaeontology

### Keywords

- Multispectral analyses
- Paleofauna mapping
- GIScience
- database managing
- fossil recovery

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Programme(s)

H2020-EU.1.3. - EXCELLENT SCIENCE - Marie Skłodowska-Curie Actions
H2020-EU.1.3.2. - Nurturing excellence by means of cross-border and cross-sector mobility

Topic(s)

MSCA-IF-2017 - Individual Fellowships

Call for proposal

H2020-MSCA-IF-2017

See other projects for this call

Funding Scheme

MSCA-IF - Marie Skłodowska-Curie Individual Fellowships (IF)

Coordinator

UNIVERSITA CA' FOSCARI VENEZIA

Net EU contribution

€ 262 269,00

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Region

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Activity type

Higher or Secondary Education Establishments

Links

Contact the organisation
Website
Participation in EU R&I programmes
HORIZON collaboration network
Partners (1)

PARTNER UNIVERSITY OF OREGON

United States

Net EU contribution € 0,00

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Activity type
Higher or Secondary Education Establishments

Links
Contact the organisation
Participation in EU R&I programmes
HORIZON collaboration network

Total cost
€ 172 130,40

Last update: 1 February 2024

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European Union, 2024