Tecniospring INDUSTRY

MITIGA

Vacancy Profile

Building an Optimized HPC-based early-warNing system for wildFIREs (BONFIRE)

About Us

Brief presentation of your company/Tecnio Centre, specifying your sector of activity, research infrastructure, research expertise in the field and in technology transfer activities and the conditions you offer (maximum 2,000 characters).

Mitiga Solutions S.L. is a spin-off of the Barcelona Supercomputing Center, specialized in the evaluation and mitigation of the impact of the natural and social hazards, in particular in the aviation, Insurance, and humanitarian industries. Mitiga develops and commercializes deep tech products using supercomputing and AI resources to quantify the risk and impact of extreme natural events providing early warning systems and other emergency response solutions.

Researcher's profile

Description of the researcher requirements. Do not include the Tecniospring eligibility criteria in this section, but rather describe the minimum education required, the preferred areas of expertise, the experience, the minimum language requirements, etc. (maximum 1,000 characters).

- PhD or Master's degree in a quantitative field such as natural sciences, applied mathematics, engineering or computer science.

- Other desirable skills: Fundamentals (proven experience is a valuable plus) in the design/development of physical/geophysical models/Experience in a corporate or start-up research role for a number of years (insurance industry experience is a plus)/Experience in developing and running software in HPC/Supercomputing/Cloud computing environaments/Sound background in data analytics and analytical problem-solving skills,including applied knowledge of data science and AI /Code in various languages (e.g. Python, Javascript, Go, C++)/Creative, showing a high degree of own initiative, high-energy and a commercial attitude/Experience in using open-source Geographical Information Systems (GIS), such as QGIS, gvSIG, GRASS; knowledge of GDAL, PostgreSQL/PostGIS.

ACCIÓ Generalitat de Catalunya Government of Catalonia

This project has received funding from the European Union's Horizon 2020 research and innovation programme under the Marie Skłodowska-Curie grant agreement No 801342

Tecniospring
INDUSTRY

Brief description of the project objectives and expected results. Remember to define the tasks that will be developed by the researcher (maximum 2,000 characters).

The successful candidate will be in charge of the technical design and development of BONFIRE (Building an Optimized HPC-based early-warNing system for wildFIREs) project. The project aims at setting out a holistic computational framework to deal with the early detection and early reaction in the context of wildfires. This encompasses different components that need to be efficiently orchestrated in supercomputing and cloud-computing environments, including the fire risk indexation by means of deterministic approaches, the processing of huge amounts of data coming from heterogeneous data sources (climate models, satellite imagery, on-ground observations), and the optimization of ensemble forecast simulations. Main objectives of the project are:

- The design and implementation of a robust and scalable framework to operate in High-Performance Computing environments.
- The ideation of cost-efficient strategies to fulfill user requirements and constraints.
- The facilitation of and easy adaptation to different business model layers.
- The integration of such a framework into the company's multi-hazard platform.

Your role as an HPC Wildfire Analyst will include:

• Develop deterministic and probabilistic wildfire risk models, potentially adopted by other perils of expertise in our Catastrophe Risk framework.

• Support the development of new wildfire and climate insurance products and service offerings as well as leveraging these forward-looking risk assessment tools for integration of other perils.

• Develop pieces of software to be run in High-Performance Computing environments.

• Actively contribute to new solutions, for example, by providing analytics and prototypes proofing the concept of our ideas.

• Actively work with the software development and science teams during the implementation of proposed methods.

• Collaborate with team members and external partners to implement new solutions from the prototype stage all the way to commercial production.

• By contributing to international research proposals and projects you can expect to be at the forefront of innovation and technology.

Incoming [X] Outgoing+Return [ ]

Sector:

Food Industries [ ] Industrial Systems [ ] Chemistry, Energy and Resources X Design Industries [ ]
Sustainable Mobility [ ] Health and Life Sciences [ ] Culture and Experience-based Industries [ ]

Technology:

Photonics [ ] Biotech [ ] ICT X
Nanotechnology [ ] Advanced Materials [ ] Advanced Manufacturing [ ]

ACCIÓ Generalitat de Catalunya Government of Catalonia

This project has received funding from the European Union's Horizon 2020 research and innovation programme under the Marie Skłodowska-Curie grant agreement No 801342

Contact information

Contact Person: Andrés Cencerrado

Email address: andres.cencerrado@mitigasolutions.com

ACCIÓ Generalitat de Catalunya Government of Catalonia

This project has received funding from the European Union's Horizon 2020 research and innovation programme under the Marie Skłodowska-Curie grant agreement No 801342