POSTDOC IN MACHINE LEARNING AND ENVIRONMENTAL MODELING

Bizkaia talent

Company Description

BC3 is a Research Centre on the causes and consequences of climate change. Led by one of the most recognized scientists in the Climate Change field -Prof. Maria José Sanz, we produce multidisciplinary knowledge to support decision making towards sustainable development at the international level. With a multidisciplinary team, connected to the main scientific institutions, networks and socio-economic agents, for a decade, our contribution to research of climate change and to the science-policy interface puts us in a unique position to offer knowledge, tools, new methodologies and cross-cutting proposals, that we lead towards action in a collaborative framework with stakeholders, to design and help implement policies aimed at sustainable development.

Information

- Deadline: 2021-12-20
- Category: Academia
- Province: Bizkaia
- Country: Basque Country
- City: Leioa

Company

BC3 Basque Centre for Climate Change

bc³
BASQUE CENTRE
FOR CLIMATE CHANGE
Klima Aldaketa Ikergai

Main functions, requisites & benefits

Main functions

The Basque Centre for Climate Change (BC3) offers a full-time postdoctoral scientist position in order to support the research activities of Research Line (RL) 5 on Integrated Modelling of Coupled Human-Natural Systems. The RL generates multidisciplinary scientific knowledge from human-nature interdependence to address complex sustainability problems through artificial intelligence (AI). The goal of the RL is to provide environmental data, models and understanding by retrieving, evaluating and integrating the existing information in order to support an effective policy-making where nature counts. Besides Ecosystem Services, the RL also tackles Natural Capital Accounting, Food Security, Marine Spatial Planning, and Renewable Energy. During the past decade, the RL has envisioned and built the ARIES (ARtificial Intelligence for Environment and Sustainability) platform, a technology that integrates network-available data and model components through semantics and machine reasoning. Its underlying open-source software (k.LAB) handles the full end-to-end process of integrating data and with multiple model integration types to predict complex change. It also supports selection of the most appropriate data and models using cloud technology and following an open data paradigm: the resulting insight remains open and available to society at large, and becomes a base for further computations, contributing to an ever-increasing knowledge base. For the first time, it is possible to consistently characterize and publish data and models for their integration in predictive models, building and field-testing technologies that have eluded researchers to date. We are looking for an individual who can support strategic activities related to integrated data science and collaborative, integrated modelling on the semantic web (semantic meta-modelling). Job description: Contribute to the ARIES (ARtificial Intelligence for Environment and Sustainability) platform, a semantic web infrastructure that uses artificial intelligence (AI) to build computational solutions to environmental, policy and sustainability problems. This technology, based on machine reasoning, machine learning, distributed computing and high-performance, multi-disciplinary and multi-paradigm system modelling, is the flagship product of the Integrated Modelling Partnership (IMP) which is expected to serve a growing number of worldwide users (from academia, governments, NGOs and industry) in the years to come. ARIES' current model resources largely focus on ecosystem services, using diverse modeling paradigms including machine learning and deductive models. The modeler will work as part of a team to develop and test new models that expand the breadth of ARIES' model library, including ecosystem services and other environmental models at scales from local to global. Data-driven models built with a variety of machine learning classifiers have been applied so far to land cover change modelling, biodiversity modelling (https://www.sciencedirect.com/science/article/pii/S2212041617306423), water quality modelling and pollination modelling. The candidate will work to expand the use of ML libraries (e.g., Weka) and applications beyond the state of the art. The position may require international travel on an as-needed basis.

Requisites

Desired machine learning skills: Familiarity with machine learning fundamentals. Aware of optimization techniques and experience with different problems and domains, ideally in spatial applications. Familiarity with traditional ML models (k-means, KNN, decision