PRE DOCTORAL RESEARCHER ON MULTIPARAMETRIC DATA ANALYSIS FOR PHOTONIC DATA

Company Description

NanoGUNE is a Research Center devoted to conducting world-class nanoscience research for a competitive growth of the Basque Country. NanoGUNE is a member of the Basque Research and Technology Alliance (BRTA) and is recognized by the Spanish Research Agency as a María de Maeztu Unit of Excellence.
The position is offered in the Nanoengineering Group under the direction of Prof. Andreas Seifert (a.seifert@nanogune.eu). The Nanoengineering group focuses on research in the fields of optics and photonics, with interdisciplinary links to nanotechnology, several engineering fields and machine learning. A particular focus is on the application of artificial intelligence to photonic data. The candidate will join a highly multidisciplinary research group focusing on spectroscopic and other photonic methods, supported by chemometrics, for biomedical research, environmental monitoring and various detection methods.
More information can be found at https://www.nanogune.eu/nano

Information

Deadline: 2024-09-22
Category: Academia
Province: Gipuzkoa
Country: Basque Country
City: Donostia-San Sebastián

Company

CIC nanoGUNE

Main functions, requisites & benefits

Main functions

The aim of the Research Project is the development of classification and regression models for data from various photonic techniques, as spectroscopy, evanescent sensing, and interferometry. The photonic data are produced by highly integrated photonic circuits that build a miniaturized gas sensing system, which is developed by several partners in the framework of a European project. NanoGUNE's part in this project is the data processing by multiparametic data analysis methods, as machine learning and deep learning. Important tasks of the work plan: Development of machine learning/deep learning models for classification and regression of photonic data, applying chemometric methods; Simulation of photonic data; Development of data augmentation methods for various photonic techniques; Optimization of data fusion techniques; Transfer of in silico code to on-chip Boolean computing (in collaboration with partner).

Requisites

The successful candidate will preferably have a master's degree in Chemometrics, Mathematics, Informatics, Physics, or related Engineering field and experience in the following skills: Machine learning and data analysis based on Chemometrics; Deep learning; Python and its main libraries for machine learning; Fluent in written and spoken English. Although not compulsory, the following points will be considered: Photonic data; Knowledge in optics, photonics, spectroscopic techniques; Experience with interdisciplinary research; Self-motivated and able to work in a team, coordination of research work.

Benefits

We promote teamwork in a diverse and inclusive environment and welcome all kinds of applicants regardless of age, disability, gender, nationality, race, religion, or sexual orientation.