Position Offered: PREDOCTORAL RESEARCHER

Project: *Towards more efficient transportation systems: real-time data and advanced analyses*

Technological and scientific fields: Data analysis and integration

Location: Palma, Islas Baleares, Instituto de Física Interdisciplinar y Sistemas Complejos (IFISC), https://ifisc.uib-csic.es/

Research Group/PI: Dr. Massimiliano Zanin, https://ifisc.uib-csic.es/en/people/massimiliano-zanin/

PROJECT SUMMARY

Thanks to the technological advances in the last years, all modern transportation systems are generating large volumes of real-time information about their dynamics. Yet, their complexity results in a compartmentalisation of the associated insights, limited reproducibility, and that real implementations are seldom achieved. Given this state of affairs, we propose the development of an open-source software library. Among other functions, it will allow applying unified cleaning and pre-processing algorithms; executing advanced data analyses, inspired in statistical physics' principles, Machine and Deep Learning; and further perform such analyses on multiple transportation modes in an integrated fashion.

PROFESSIONAL PROFILE

Minimum requirements:

- Master's degree in Physics, with a focus on nonlinear or complex systems.
- Advanced programming skills, particularly in Python and related data analysis libraries, as well as experience with version control systems (e.g., Git) and data management.
- Proficiency in English, with excellent written and verbal communication skills.
- Experience with high-performance computing (HPC) and super-computing environments.
- Familiarity with machine learning (ML) and deep learning (DL) models.

Merits to be considered:

- Bachelor's degree in Computer Science or equivalent.
- Proficiency in advanced data visualization tools and techniques.
- Participation in international research projects or collaborations.
- Experience in preparing and delivering scientific presentations at seminars or conferences, and scientific publications.

WHAT IS OFFERED

We offer contributing to an innovative project that will leverage state-of-the-art techniques in data processing and analysis; a training program centred in the obtention of a doctorate (180 ECTS); multiple research stays in national and European centres (60 ECTS); and the integration in an international and multidisciplinary research group.

Contract conditions:

Predoctoral Researcher contract of 4 years' duration. Gross annual salary of 23,871.33 €. Start of contract: before 31 December 2024

PRINCIPAL INVESTIGATOR CONTACT

Email: mzanin@ifisc.uib-csic.es Phone: +34 971 25 96 29









