The Nanoscience Cooperative Research Center, CIC nanoGUNE, located in Donostia / San Sebastian, Basque Country (Spain), is currently looking for a

Pre-doctoral Researcher
to work on
AI-driven control of Medical Microrobots and Data Analytics

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 NanoBiosystems Group at CIC nanoGUNE is inviting applications for a PhD position in the field of medical microrobotics, with a focus on real-time data analytics, machine learning, and closed-loop control systems.

This interdisciplinary project merges robotics, AI, and biomedical engineering to develop intelligent microrobots for medical applications. The successful candidate will contribute to the development of autonomous navigation and control algorithms to guide microrobots in complex biological environments.

The PhD project will involve:

- Developing Python-based frameworks for data acquisition and analysis of microrobot motion and response
- Designing and training machine learning models for dynamic decision-making and predictive control
- Implementing closed-loop feedback systems to enable adaptive microrobot behavior in real time
- Collaborating with experimental teams to integrate algorithms for data analytics

Candidate Requirements

- A Master's degree in computer science, robotics, physics, biomedical engineering, or a related field
- Strong programming skills in Python (experience with libraries like NumPy, SciPy, scikit-learn, PyTorch, or TensorFlow is a plus)
- Background in data analytics, machine learning, or robot control systems
- Familiarity with control theory, real-time systems, or computer vision is advantageous
- Excellent communication skills in English and a collaborative mindset
- Motivation to work in a multidisciplinary and translational research environment

We offer:

- Enrollment in a fully funded **PhD program within a vibrant international research institute**
- **Access to cutting-edge infrastructure and high-performance computing resources**
- **Close mentorship and collaboration with experts in nanotechnology, robotics, and biomedical science**
- **Opportunities for professional development and international research exchange**

The position is expected to start in 01/09/2025 and for a total length of up to 12 months (01/09/2025 - 31/08/2026) in the Nanobiosystems Group. The contract will be funded by the .

Candidates should **apply** by completing the form below and attaching the following documents:

a. A complete CV
b. A cover letter and at least two reference letters grouped in a single PDF file

The **deadline** for applications is **30/04/2025**.

NOTES:
(i) All applicants will receive an answer after the end of the selection process; but please note that due to the large number of submissions that are expected, we cannot provide individual feedback.
(ii) Additional information about nanoGUNE's commitment towards HR excellence in Research and Gender Equality are available on our website.
(iii) We encourage you to subscribe to our HR mailing list to receive information related to nanoGUNE's open positions and open calls for different training and talent attraction programs.