

Postdoc in Machine Learning for Precision Oncology

Job Profile

CSS

Offer description

The postdoc will be based in Nantes and will join a multidisciplinary consortium comprising two bench research teams (one specialized in EVs and miRNAs and another in modification of miRNAs), two core facilities (one dedicated to proteomic and another to DNA sequencing), three hospitals (each having a vast biobank of lung cancer clinical samples) and a computational group in machine learning for precision oncology. The postdoc will report directly to the leader of the consortium (Delphine Fradin) and to the leader of the latter group (Pedro Ballester). Relevant papers for this post are:

- Ogunleye A. et al. (2024) Health Data Science <https://spj.science.org/doi/10.34133/hds.0108>
- Ballester P.J. (2023) Nature <https://www.nature.com/articles/d41586-023-03948-w>
- Ogunleye A. et al. (2022) Advanced Science <https://doi.org/10.1002/adv.202201501>
- Ballester P.J. et al. (2021) Briefings in Bioinformatics <https://academic.oup.com/bib/article/23/1/bbab450/6398131>
- Nguyen L. et al. (2021) Biomedicines <https://www.mdpi.com/2227-9059/9/10/1319>
- Ballester P.J. & Carmona J. (2021) npj Precision Oncology <https://www.nature.com/articles/s41698-021-00216-w>

Researcher profiles

- First-Stage Researcher (*PhD candidate*)
- Recognised Researcher (*with less than 4 years research experience after PhD*)
- Established Researcher (*with more than 4 years research experience*)
- Leading Researcher

Research Fields (2 max.)

- | | |
|---|---|
| <input checked="" type="checkbox"/> Biological Sciences | <input type="checkbox"/> Medical Sciences |
| <input type="checkbox"/> Chemistry | <input type="checkbox"/> Neurosciences |
| <input checked="" type="checkbox"/> Computer Science | <input type="checkbox"/> Pharmacological Sciences |
| <input type="checkbox"/> Engineering | <input type="checkbox"/> Physics |
| <input type="checkbox"/> Environmental Science | <input type="checkbox"/> Technology |
| <input type="checkbox"/> Ethics in Health Sciences | <input type="checkbox"/> Other (specify): |

Main Activities

- Analysis and curation of clinical pharmaco-omic datasets from lung cancer patients
- Investigating the most predictive machine learning models to predict the response of patients to drug treatment from molecular profiles of their tumours.

Associated Activities

- Understanding and writing code.
- Presenting results periodically.
- Writing results for publication.

Specific

- Requirements or Constraints**
- Available to visit collaborator at Imperial College London for at most 2 weeks.

- Skills/Qualifications**
- Skilled in the implementation of R or Python scripts for scientific data analysis.
 - Ideally, well-versed in supervised learning from high-dimensional data.
 - Ideally, prior use of computational tools and resources to analyse clinical pharmaco-omic data.
 - Ideally, experience in writing research for publication in international journals.
 - Ideally, master project and/or internship in the application of machine learning to solve real-world problems in the context of biomedical research.
 - Ideally, knowledge about handling, integrating, processing and analysing molecular profiling data (e.g. RNA-seq).

Required Experience 0 to 2 years 2 to 4 years 4 to 10 years >10 years

Fields: Data science, Bioinformatics.

- Required Education Level or Diploma**
- Excellent first and master degrees with a major focus on computational analysis of experimental data, preferably in an area directly relevant to the project

- Required Languages**
- Ability to communicate effectively in English, both orally and in writing.

Hosting Unit

Code Inserm U1307

Name CRCI2NA

Director Philippe Juin

Composition

Address 8 quai Moncouso, 44007 Nantes

Website <https://crci2na.univ-nantes.fr/>

Contract

Type

Duration 18 months

Salary

Envisaged Start Date 1 July 2024

Application

Applicants must send a CV and a cover letter to: Pedro Ballester (pedro.ballester@inserm.fr) and Delphine Fradin (delphine.fradin@inserm.fr)

Contact for further information (name, telephone/mail): Pedro Ballester (pedro.ballester@inserm.fr) and Delphine Fradin (delphine.fradin@inserm.fr)

Deadline for application: 1 June 2024