



The Vall d'Hebron Research Institute (VHIR) is a public sector institution that promotes and develops the research, innovation and biosanitary teaching of the Vall d'Hebron University Hospital. Through the excellence of our research, we identify and apply new solutions to the health problems of society and we contribute to spread them around the world.



HR EXCELLENCE IN RESEARCH

In April 2015, the **Vall d'Hebron Research Institute (VHIR)** obtained the recognition of the European Commission **HR Excellence**.

This recognition proves that VHIR endorses the general principles of the European Charter for Researchers and a Code of Conduct for the Recruitment of Researchers (**Charter & Code**).

VHIR embraces Equality and Diversity. As reflected in our values we work toward ensuring inclusion and equal opportunity in recruitment, hiring, training, and management for all staff within the organization, regardless of gender, civil status, family status, sexual orientation, religion, age, disability or race.

Research Engineer (Medical Image & AI)

Stroke Research

We are looking for an engineer with a biomedical/computer science profile with an interest in medical image processing and AI to help develop clinically relevant image processing tools for applications in the stroke setting. We are a research team with a majority of clinicians, with several engineers (one senior medical image engineer) and active medical image processing projects. You will have supervision and support of a medical image research engineer.

Our projects include translational research with deep learning vision algorithms (e.g., CNNs, ViT) and graph neural networks, mainly focused on improving stroke care by introducing advanced processing onto pre-interventional medical imaging (i.e., CT) to derive powerful decision support for endovascular treatment in stroke.

Our strengths reside in wide availability of data (internal and external sources through strong collaborations), close contact with clinicians (you will always be designing solutions aimed at solving a specific need) and full pipeline for development and deployment (there will exist the necessary infrastructure and support for deployment of developed solutions).

You will also be communicating with the IT department within the hospital when integrating the solutions within the hospital infrastructure, and you will have to collaborate with external entities in the designing process of related solutions such as the Visiocat project, aimed at creating a platform for image visualization at a regional level.

Adequate projects for Master's thesis and prospects of doing a PhD.

JOB DESCRIPTION

Education and qualifications:

Required:

- Bachelor's degree in Biomedical Engineering, Computer Science, Data Science, Mathematics, Physics or related field.



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- Fluency in Python (minimum: PyTorch, Numpy, Pandas).
- Comfortable with git, ssh.
- Fluency in English (minimum B2/C1 preferred).

Desired:

- Master's degree in a related field (finished or for Master's thesis).
- Validated experience in medical image/deep learning projects (any publication record will be valued).
- MongoDB.
- Familiarity with medical imaging modalities (e.g., CT, MRI, DSA, etc.) and image formats (DICOM, NIFTI).
- Experience in training, testing and/or deploying deep learning solutions (models developed in PyTorch).

Main responsibilities and duties:

- Lead engineering projects in the medical image context from beginning to end. Curated databases are readily available.
- Write state-of-the-art reviews in relevant medical image processing algorithms in preparation for translational projects.
- Turn your engineering projects into clinical and technical publications.
- Help write grant applications for financing.
- Assist collaboration with external entities to overview data entry processes and design of solutions.
- Residual participation in smaller projects as an engineering aid to clinical projects.

Labour conditions:

- Full-time or part-time position (full-time preferred): 20-40h/week.
- Starting date: immediate.
- Gross annual salary: 22 000 – 27 000 euros (full-time). Remuneration will depend on experience and skills. Salary ranges are consistent with our Collective Agreement pay scale.
- Contract: *permanent linked to project (1 year)*.



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What can we offer?

- Incorporation to Vall d'Hebron Research Institute (VHIR), a public sector institution that promotes and develops the biomedical research, innovation and teaching at Vall d'Hebron University Hospital (HUVH), the biggest hospital of Barcelona and the largest of Catalan Institute of Health (ICS).
- A scientific environment of excellence, highly dynamic, where high-end biomedical projects are continuously developed.
- Continuous learning and a wide range of responsibilities within a stimulating work environment.
- Individual training opportunities.
- Flexible working hours.
- 23 days of holidays + 9 personal days.
- Flexible Remuneration Program (including dining checks, health insurance, transportation and more)
- Corporate Benefits: platform through which you can obtain significant discounts on travel, culture, technology, gastronomy, sports... among many others.
- Healthy Offering: choose from a variety of wellbeing focused activities to be the healthiest you.
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How to apply:

Applicants should submit a full Curriculum Vitae and a cover letter with the reference "Research engineer position" to the following email addresses: pere.canals@vhir.org and seleccio@vhir.org

Deadline to apply: 26/11/2023