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Postdoctoral or Researcher position in Digital Twins to Treat Atrial Fibrillation (DAWN-AF)

Would you like to take part in an innovative project?
When digital innovation supports cardiac research...

Join up the Liryc within the University of Bordeaux!

The Institute of Cardiac Electrical Disorders (LIRYC) in Bordeaux, France has been at the forefront of ablation therapy for atrial fibrillation, having pioneered the technique. Though it is the most efficacious treatment for the disease, the disease returns in a significant number of patients a few years following an initial successful treatment. It is hoping to reduce recurrence of atrial fibrillation using personalized atrial electrophysiological models, called digital twins.

The DAWN-AF project, funded by the Horizon2020 ERA PerMed programme and incorporating partners from Austria and Chile, aims to develop a personalized medicine approach, based on computer modelling, for atrial fibrillation ablation to prevent its recurrence.

Physiological digital twins of patient hearts will be created from imaging (MR/CT) and calibrated using machine learning which will analyze and adjust ECG recordings, as well as clinically acquired electrograms from implanted or portable devices. The models created will be at the leading edge, and of the highest fidelity, incorporating fine, distinct anatomical details while using advanced computational/numerical methods to keep run time tractable. Machine learning will be employed to analyze clinical data in real-time to decide the optimal ablation strategy.

In this context, we are looking for a **Post-doc or researcher in digital twins to treat atrial fibrillation, with experience in machine learning and experience with biomedical signals.**

Main activities:

We will create patient-specific high resolution atrial models which are electrophysiologically tuned using the electrocardiogram.

Multiple models will be generated based on different clinically unmeasurable model assumptions, and ablation sets designed for each.

During the ablation procedure, machine learning will be used to analyze electroanatomical mapping data to infer the correct model and the accompanying ablation set in real-time.

Your skills:

Holder of a PhD in digital engineering or applied mathematics you have proven knowledge of mathematical equations and bases in non-linear systems.



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- You have basic knowledge in one or several topics : electrophysiology, biophysically-based computer modelling, high performance computing
- You know how to program in C++, Matlab and Python languages and analyze results
- You are a teamplayer and also know how to be autonomous in your activities

More info:

By joining IHU Liryc, you will integrate an international multidisciplinary environment. will be working with a multidisciplinary team consisting of clinicians, imagers, biomedical engineers, and modellers.

It is located in Pessac (8 Km from Bordeaux, 60Km from the Atlantic coast) on the site of the Xavier Arnoz Hospital, near the Haut Lévêque Cardiology Hospital where the clinical teams involved in the research themes of the Institute work. The building is modern and in the surrounded by a wooded park.

Fixed-term contract until the 28th of February 2026.

Salary gross: from 2700€ according to your experience and the salary grid

Job Benefits:

50 days of vacation from the first year of collaboration

Remote working possible according to needs and organization of the service

Refill of 75% of the subscription to the public transport

Participation in the private healthcare up to 15€ / month

Leisure, sport and culture for all staff

Disabled-friendly establishment

Possibility of staff parking

Sustainable mobility package for commuting – work

Recruitment process: Applications are reviewed as they arrive.

Candidates selected for an interview will be contacted by the Recruitment Officer for a first pre-qualification phone conversation. An interview with the supervisor will then be organised by videoconference or on site within the Liryc.

Interested applicants should send a CV, brief statement of qualifications and basis for interest in the position, copies of up **to 3 relevant publications, and the email addresses of 2 appropriate references.**

Please note that to be admissible, you must apply to the job offer or send e-mail with your documents at: job-ref-hrj40gt9ee@emploi.beetween.com

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