

MASTER (M2) INTERNSHIP IN CARDIAC MODELING

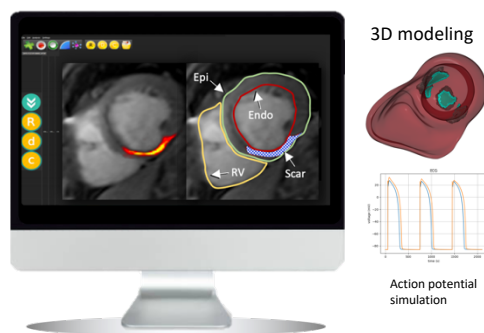
Internship factsheet

THE INSTITUTION

IHU LIRYC – Heart Rhythm Disease Institute – is a unique institute based in Bordeaux distinguished for its expertise in heart rhythm disorders with a medley of world-renowned experts working in various fields (clinical, imaging, modeling, artificial intelligence, computer science, ...). The research performed over the years at LIRYC has created a dynamic and unique intellectual atmosphere where scientists can conduct cutting-edge research with the sole goal of improving cardiac patients care.

INTERNSHIP DURATION

The position is available starting January 2026 and for the expected duration of 4 to 6 months. The research project will be part of a collaboration between the imaging and the modelling teams at IHU LIRYC and the candidate will be interacting with both teams.



REQUIREMENTS

Candidates must fulfil the following:

- Must have completed a bachelor's degree in the field of biomedical engineering.
- **Passionate** for medical research and talented in communicating and explaining scientific ideas.
- Knowledge in electrophysiology, MRI imaging and/or image segmentation is appreciated. Skills in computer programming (Python) and/or cardiac modelling are preferred and should be familiar with Linux environment. English language skills are highly required.
- **Highly motivated**, well-organised, and eager to learn in a multidisciplinary and innovation-driven environment.

To apply: Should you be interested, please submit a CV to Prof. Aurelien Bustin (aurelien.bustin@ihu-liryc.fr) and Dr. Sara Zein (sara.zein@ihu-liryc.fr)

Project Description

3D heart models based on LGE-MRI clinical data proved a safe and non-invasive option to study arrhythmogenic effects of scar tissues formed after myocardial infarction in-silico. A new MRI sequence developed by the imaging team at IHU LIRYC enables an improved myocardial scar visualisation which would facilitate the accurate modelling of scar tissue. The aim of this project is to perform electrophysiological simulations of heart models based on the new MRI sequence to assess the scar effects on ventricular tachycardia using personalized models.

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