Postdoctoral Position

Keywords : Machine learning, Reinforcement learning, Topological Data Analysis, Personalized medicine, Dynamic treatment regimen

The PreMediT project is offering a 12-months post-doctoral position, renewable once. We are looking for a highly motivated candidate with an expertise in statistics, machine learing, or applied topology, with a strong interest for applications in health sciences.

The project aims at developing new mathematical and computational tools for personalized medicine (PM), with a particular focus on topological methods. The goal of PM is to tailor treatment according to patients' characteristics by reliably figuring out which patient will benefit from a given treatment and when to initiate, modulate or stop such a treatment. Nonetheless, the characteristics of the data involved (small size, sparsity, or partly categorical nature) pose some crucial challenges. We believe these challenges can be addressed by integrating information about the geometric and topological structure of the data into the machine learning pipelines.

Various questions may be studied within this project, depending on the candidate's expertise. Possible topics are:

- developing new approaches, or enhancing existing approaches, for determining robust treatment policies,

- designing or learning effective topological features for medical longitudinal data.

Practical information

Education level: Doctoral degree in mathematics, statistics or computer science

Location: Inria (Saclay) and Hôtel-Dieu (Paris)

Starting date: Sept. 2022 - Jan. 2023

Duration: 12 months, renewable once

Salary: around 2 100 € net /month, health insurance included

Contact: steve.oudot@inria.fr, francois.petit@inserm.fr

How to apply: send an e-mail to both addresses above, with the following attachments:

- a cover letter, with a brief account of your research interests and motivation for applying to the position,

- a resume and a complete list of publications,

- the names and email addresses of at least 2 references.