Postdoctoral position in Biostatistics

The **Research Centre "Bordeaux Population Health"** (BPH, Unit U1219 Inserm-University of Bordeaux) is currently structured around 15 teams. They cover a wide range of domains (infectious diseases, neurology, oncology, trauma, mental health), determinants (social, environmental, nutritional, genetic), methods (biostatistics, psychology) and populations (youth, adults, seniors, general population, patients). Within the BPH, the **Biostatistics team** led by Hélène Jacqmin-Gadda develops statistical methods for the analysis of data from epidemiological studies or clinical trials with a major focus on dynamic models for the analysis of cohort studies. Over the past years, the Biostatistics team has strongly contributed to the international dissemination of joint models for longitudinal data and time-to-events in epidemiology and clinical research. Among other objectives, these models are used to propose dynamic prognostic tools for clinical events based on repeated measures of longitudinal markers. Accounting for the information from repeated measures allows to reach high predictive abilities and to update the individual predictions at each new marker measurement. They have been applied to propose prediction tools for the recurrence of Alzheimer's disease, cancer relapse , …

The ANR project Joint Models for Epidemiology and Clinical Research (JMECR, PI : Helene Jacqmin-Gadda) aims at tackling new challenges in joint modelling to account for all the data available and investigate new clinical research hypotheses. **Developping dynamic prediction tools relying on many longitudinal markers** is one of these major challenges because estimation of joint models become numerically intractable when the number of markers increase.

Under the joint supervision of Helene Jacqmin-Gadda and Reza Hashemi (Prof of Statistics at Razi University, Iran), **the applicant will contribute to the development of a model averaging approach to compute individual predictions from repeated measures of several markers by combining prediction from joint models including a single marker**. Different weighting strategies will be considered and the model averaging approach will be compared to other approaches developped in the team (PhD Thesis of Anthony Devaux under the supervision of Cecile Proust-Lima) and in the literature (Mauff et al, 2020). The Post-doc will be also in charge of the implementation of the method and of the simulation program using the R language and its application to real data to predict either the risk of dementia in the elderly or the risk of complications after a subarachnoid hemorrhage in an intensive care unit. Data analyses will be performed in collaboration with clinicians and epidemiologists.

Required profile :

PhD in Statistics or Biostatistics with good skills in statistical modelling and mastery of programmation with the R language and/or other programming language. Knowledge of

statistical methods for time-to-event and longitudinal data and development of prediction models will be appreciated. Aptitude to work in team, dynamism and autonomy.

Position :

1-year position to be filled as soon as possible from January 2022. A renewal on an associated research project could be considered.
Gross yearly salary: From 31 000€ to 40 000€ depending on previous experience (following university salary scale), contribution to transportation costs.
Application: send a CV and letter of motivation to Helene Jacqmin-Gadda
Part-time remote working possible

Contacts :

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