PostDoc in Mathematics: Programming, Scientific Computing and Learning for Mean Field Models

Université Côte d'Azur,
Laboratoire de Mathématiques J.A. Dieudonné, Nice, France

● LOCATION

Université Côte d'Azur is located on the French Riviera. It is one of the ten French universities distinguished by a label of excellence (IDEX). It is also linked to other international research institutes: INRIA Sophia-Antipolis, which is a computer science institute, and the 3IA Côte d'Azur, which is an artificial intelligence institute.

The Dieudonné Mathematics Laboratory is located on the Valrose campus of the Université Côté d'Azur, in the center of Nice. The research activity covers a broad spectrum of topics in mathematics, including a strong team in probability and statistics.

The successful candidate will work at Dieudonné Mathematics Laboratory.

● SCIENTIFIC DESCRIPTION

The successful candidate will work in the framework of the ERC AdG project ELISA (Exploration for Large Interacting Systems of Agents), directed by Professor François Delarue. This ERC project deals with mathematical theories and numerical tools for mean field models, which are used to describe the statistical state of a population. This includes mean-field models for which the population state is itself random. A key objective is to show that randomization can enable a form of exploration, with theoretical and numerical advantages and benefits in statistical learning. Applications include mean-field models of rational agents, such as mean-field control problems or mean-field games.

The postdoc will contribute to the most numerical side of the projet, by developing and implementing numerical methods and learning algorithms, in interaction with the other members of the project. She/he will develop and study schemes and related codes towards successful and competitive programs. She/he will also run and supervise numerical experiments.

● **POSITION**

This is a full-time position, for 3 years. Candidates should have a PhD in mathematics, applied mathematics, scientific computing or statistical learning. They should have a strong background in probability or PDE theory and possibly mean field models. They should be proficient users of scientific languages like C/C++, Python, TensorFlow, R. They should have demonstrated their ability to design and implement numerical or learning methods in relation with a mathematical or statistical project. If necessary, they should agree to develop their knowledge in statistical learning methods.

Université Côte d'Azur offers certain facilities. In particular, new researchers can benefit from a temporary accommodation of 1 to 3 months at the [Faculty Club of Nice](#).

The position will be open from September 2023.

Salary will be communicated on demand.

● **APPLICATION PROCEDURE**

Candidates may contact François Delarue (francois.delarue@univ-cotedazur.fr) for any questions. Applications should include: a letter of motivation, curriculum vitae, transcripts of graduate degrees, PhD viva reports (if available), PhD diploma and at least two reference letters.

Pre-selected candidates will be interviewed online.

Applications are open till June 10th 2023.