

PhD position in Computer Science at University of Neuchâtel

Workplace: Neuchâtel, Switzerland

We invite applications for a fully funded PhD research position in Computer Science.

The successful candidate will join our group on reinforcement learning and decision making under uncertainty more generally.

Applicants must have a Master degree in Computer Science (or equivalent), be fluent in English, and demonstrate strong team-working abilities. We expect the candidate to perform research in one the following domains:

- Reinforcement learning and decision making under uncertainty:

1. Exploration in reinforcement learning.
2. Decision making under partial information.
3. Representations of uncertainty in decision making.
4. Theory of reinforcement learning (e.g. PAC/regret bounds)
5. Bayesian inference and approximate Bayesian methods.
6. Human-AI interaction and inverse reinforcement learning.

- Social aspects of machine learning

1. Theory of differential privacy.
2. Algorithms for differentially private machine learning.
3. Algorithms for fairness in machine learning.
4. Interactions between machine learning and game theory.
5. Inference of human models of fairness or privacy.
6. Mechanism design and incentives.

The main duties include working as a teaching assistant for courses in reinforcement learning or differential privacy and fairness.

The main supervisor will be [Christos Dimitrakakis](#). Examples of our group's past and current research can be found [here](#). The student will have the opportunity to visit and work with other group members at the [University of Oslo, Norway](#) and [Chalmers University of Technology](#), Sweden.

The PhD candidate must have a strong technical background, as documented by a degree in statistics, computer science or economics, in the following areas:

1. Thorough knowledge of calculus and linear algebra.
2. A good theoretical background in probability and statistics/machine learning.
3. Practical experience with at least one programming language.

The candidate's background will be mainly assessed through their MSc thesis and transcripts, and secondarily through an interview.

Location

The University of Neuchatel is settled in a beautiful landscape of lake and mountains that offers a friendly atmosphere to about 4,000 students. It was recently ranked 18th in the world among the universities with fewer than 5,000 students. The city of Neuchatel belongs to the French-speaking part of Switzerland and is located at the border of the German-speaking part of the country. Courses at the computer science department are taught in English, in the context of the joint Berne-Neuchatel-Fribourg Master in computer science. For more information, visit <http://www.unine.ch>.

PhD expected start: September 2022 or soon afterwards

Application deadline 31 May 2022.

To apply send an email to christos.dimitrakakis@gmail.com with the subject 'PhD Neuchatel'.

An application must include:

1. A statement of research interests and motivation relevant to the position.
2. A CV with a list of references.
3. Your MSc thesis or another research work demonstrating your academic writing.
4. A degree transcript.

Feel free to include any other additional information.