PhD positions in Computer Science at the University of Neuchatel, Switzerland

We are looking for multiple **PhD students** to join our group on reinforcement learning and decision making under uncertainty more generally, at the [University of Neuchatel](#), Switzerland. The title of the project is *Fair AI in Heterogeneous Societies*. We expect the candidates to perform research in one the following domains.

- Reinforcement learning and decision making under uncertainty:

1. Exploration in reinforcement learning.
2. Decision making nuder 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 differntial 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 position is fully funded. 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, as well as Harvard University, USA and EPFL, Switzerland.

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, or game theory
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.

Application Information

- **Starting date** January 2024 or soon afterwards.
- **Application will be evaluated on a rolling basis**

To apply send an email to myname.lastname@unine.ch with the subject 'PhD FairRL'.

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.