

PhD positions in Computer Science at University of Neuchatel, Switzerland

Job starts : 01.12.2021 or later

Term : 4 years

We invite applications for fully funded PhD research positions in Computer Science at the University of Neuchatel, Switzerland (<http://www.unine.ch>). The positions will address research challenges at the intersection between system and security, including trustworthy cloud computing, trusted execution environments, or secure machine learning. Applicants must have a Master degree in Computer Science (or equivalent), be fluent in English, and demonstrate strong team-working abilities. Candidates with proven programming skills who are knowledgeable in security, operating systems and machine learning are particularly encouraged to apply.

CONTEXT

Confidential cloud computing, ie the ability to deploy and shield sensitive applications over untrusted and possibly compromised cloud infrastructures, is of paramount importance to boost a wider adoption of the cloud paradigm, especially for sensitive application domains, such as e-finance, e-health, and such.

Trusted execution environments (eg, Intel SGX, ARM TrustZone) offer a turn-key solution to provide several desired guarantees (privacy, integrity). Moreover, TEE's adoption rate from cloud providers and practitioners is increasing. One of the objective of this research is study the current limitations of TEE-based systems (ie, lack of attestation in case of TrustZone-based systems, challenges of hybrid TEE configurations), and design, implement and experimentally evaluate innovative solutions to overcome such limits. The areas of applicability for such innovations are inherently wide, and include uprising cloud-based paradigms (ie, secure FaaS), scalable and secure blockchains, TEE-based secure machine learning frameworks and more. The students will further collaborate with international research groups on related topics, for which a strong attitude to team working is essential.

REQUIREMENTS

The working languages at the University of Neuchatel are English and French. The selected PhD students are expected to participate to a limited amount of teaching activities in either language. The candidate is expected to use state-of-the-art tools for collaborative team working and software development, such as git/gitlab, Docker, Slack/Discord, and such.

LOCATION

The University of Neuchatel is settled in a beautiful landscape of lake and mountains that offers a friendly atmosphere to about 5,000 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>.

APPLICATION

Applications should be submitted by e-mail to Dr. Valerio Schiavoni at <valerio.schiavoni@unine.ch> with title "Application PhD position 2021", including: (a) Curriculum vitae; (b) List of 2-3 reference persons and their e-mail addresses (we ask for recommendation letters ourselves and we will ignore any recommendation letter sent by the candidate her/himself); (c) Transcripts of undergraduate and graduate studies; (d) Links to masters and internship thesis/reports, and publications if applicable; (e) Links to examples of software personal contributions (on github or similar). All documents must be sent as a single pdf. Applications will be screened as they arrive and until appropriate candidates are selected

The University of Neuchâtel is an Equal Opportunity Employer.