

# PhD student positions at the Institutes IALS and IDSIA, Faculty of Communication Culture and Society and Faculty of Informatics at USI Università della Svizzera italiana

Università della Svizzera italiana (USI) is a young and lively university, a hub of opportunity open to the world where students are offered a quality interdisciplinary education in which they can be fully engaged and take center stage, and where our researchers can count on having the space to freely pursue their initiative.

Established in 1996, USI is in constant evolution, always taking on new challenges while remaining true to its three guiding principles: quality, openness and responsibility.

The Institute of Argumentation, Linguistics and Semiotics (IALS) provides a lively research environment for PhD students that specialize in natural language processing (NLP). Interaction with several researchers working in NLP, Linguistics and Computer Science as well as interdisciplinary interactions with colleagues across and outside the faculties of Informatics (INF) and Communication, Culture and Society (COM) is an asset for PhD candidates.

The Dalle Molle Institute for Artificial Intelligence (IDSIA) conducts research activities in a spectrum of disciplines related to the field of Artificial Intelligence (AI), from deep neural networks to explainable causal networks, from machine vision to autonomous robotics, intersecting control engineering and operations research with AI/ML methods.

The institutes invite applications for two fully funded Ph.D. positions in natural language processing and machine learning for conducting research in the project entitled SATURNA.

## **The project**

SATURNA (<https://www.saturna.ch/>) is a large-scale four-year project funded by the Swiss National Science Foundation. It is an inter-disciplinary collaboration between the University of Bern, EPFL, Idiap Research Institute and the National University of Singapore, with specialists in NLP, graph deep learning, knowledge-enhanced AI, computational biology and translational science.

The role of the team of Prof. Lonneke van der Plas (<https://usi.to/bkks>) is to draw parallels between text sequences and RNA sequences, thereby leveraging advances made in the NLP field to learn informative representations of RNA sequences. Vice versa, handling the intricacies of RNA, such as extremely long-distance dependencies, context-dependency, structure, function etc. sheds new light on assumptions made in NLP models, that will be tested for their applicability on language.

### **The Ph.D. Positions**

The doctoral students will be enrolled in the PhD programme of the Faculty of Communication, Culture and Society or in the PhD programme of the Faculty of Informatics, depending on suitability of the candidates' profile and faculty organisation. The doctoral student will work under the scientific supervision of Prof. Lonneke van der Plas (<https://usi.to/bkks>) in close collaboration with the experts from other institutions in the SATURNA team. The successful candidate will be offered the possibility to work in a fast-growing, cross-institutional, dynamic research team and have the opportunity to collaborate with members of Van der Plas' NLP lab that are based at USI and the EPFL.

The PhD candidate will collaborate to help develop the institutes' research agenda. One of the two PhD position is focused on the development of new training methods and architectures to develop and further train foundation models that are suitable for the intricacies of RNA sequences as explained above. The second PhD student will focus on interpreting what these models learn, probing the internal representations to understand what information they capture, how they encode structure, regulation, and function, and what this reveals about the underlying grammar of RNA biology.

On the teaching side, they will work as teaching assistant in courses at either bachelor or master level, helping in the preparation of teaching materials and tutoring students.

The PhD candidates are also asked to present papers at scientific conferences, and produce publications for scientific journals.

### **Candidates' profile**

Ideal candidates should satisfy the following requirements:

- A Master (or equivalent title) in natural language processing, computer science, applied mathematics, or related disciplines.
- Full understanding of the foundations of transformer-based language models
- Strong programming skills
- High interest in cross-disciplinary work
- High interest in developing new methods for modelling sequences, structure and function in language, and RNA biology, or high interest in developing new methods for interpretability.
- Good skills in oral and written English (official language of the Ph.D. program)
- Good oral and writing skills in one (OR MORE) national Swiss languages (German, French, Italian, Romansh) is a plus
- Ability to work independently and to plan and direct own work
- Motivation to communicate findings such as publishing research papers, attending conferences, etc.
- Motivation to engage in the elaboration of a PhD dissertation. Ability to work in team and autonomy in scheduling research steps. Interest for teaching and tutoring students and availability to collaborate with colleagues (engage in scientific dialogue, listen and think critically) are required.

### **Contract terms**

Admission to the Ph.D. program is highly competitive. Admission decisions are based on the candidate's background, interests, attitude and potential for academic achievement. Successful enrolment in the Ph.D. program and the position as doctoral researcher are not compatible with a further professional activity.

The position is fully financed and the salary levels correspond to those set by the Swiss National Science Foundation for PhD researchers.

The successful candidates will work as research assistants at the Institute IALS and IDSIA, and will have the possibility to interact with an international network of collaborators.

Workplace is USI Università della Svizzera italiana, located in Lugano, Switzerland. Availability to travel to other parts of Switzerland and abroad (for purposes of collaboration and research) is required.

Starting date is 1 September 2026 (at the earliest). However, the position will be kept open until a suitable candidate has been found.

### **The Application**

Applications may be submitted upon acceptance of the Applicant Personal Data Processing Notice found at the following **LINK**. In the online form, you will be asked to declare that you have read and understood our privacy policy.

Applications should contain: (1) a complete CV, (2) copies of relevant diplomas, certificates as well as the full transcript of records that prove the candidates' eligibility for doctoral studies in Informatics or Communication Sciences, (3) an electronic version of a research work (Master thesis or other scientific publication).

The latter must be accompanied by a short summary in English (1 page maximum). A support letter written by the Master thesis supervisor (or another Professor who knows the candidate well) is equally welcome.

Applications must be submitted ONLINE by filling out the form accessible through the following link: **APPLY**. You will also need to upload the documents listed above.

Requests for further information to Prof. Lonneke van der Plas (lonneke.vanderplas@usi.ch), while adding the sequence 'PHD-SATURNA' in the title of the mail.

Applications received before 15 June 2026, will be given priority. However, applications will be received until the position is filled.

USI strives to be an equal opportunity and family friendly employer and is further responsive to the needs of dual career couples. We guarantee that the selection process will give equal opportunities to female and male researchers.

As an institution that values diversity, USI particularly encourages applications from women and from all individuals from underrepresented groups.

Lugano, 26.05.2026