
Funded PhD (1) and Post-doc (1) positions in Social Network Modelling Institute of Computational Science (ICS) Università della Svizzera italiana (USI) Lugano (Switzerland)

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.

USI invites applications for one (1) Phd and one (1) Post-doc positions in Social Network Modelling.

Professor Ernst C. Wit and Professor Alessandro Lomi at the Institute of Computational Science at USI (Lugano, Switzerland) are looking for two SNSF (Swiss Science Foundation) funded positions: one at the PhD level and one at the postdoctoral level. The projects will be under supervision of Prof. E.C. Wit and Prof. A. Lomi. Both positions are for 4 years and are funded by the SNSF, the Swiss Science Foundation. The project is entitled:

The Dynamics of Innovation: latent space modelling of patent citations

It involves an interdisciplinary approach to the societal dynamics of knowledge through relational event modelling and equally involves sociological as statistical modelling aspects.

Project Summary

That knowledge is a cumulative process has been recognized for a long time. In the twelfth century the French philosopher Bernard of Chartres thought of the new generation of thinkers as "dwarfs perched on the shoulders of giants." In this project we focus on knowledge contained in patents and operationalize standing on those shoulder of knowledge as a patent citation. By analyzing the network of patent citations, we aim to study the endogenous, self-organizing character of patent citation networks. Our angle will be to study patent citations as a complex adaptive system. The objective of the project is to produce a data-based understanding of the system of patent citations network as an evolving knowledge system.

Postdoc Project. Dynamics of innovation

The postdoc project focuses on developing of a novel theoretical framework necessary for the understanding of knowledge as existing in a latent space of which observed patents are only the observable counterpart. We are looking to recruit a team member with a strong quantitative background, and with a substantive interest in the dynamics of innovation. Given the interdisciplinary nature of the project, disciplinary background of the candidates is less important than their experience with data management and curation, competence in the specification and estimation of statistical models for networks, and an interest in extending their application to very large relational datasets.

PhD Project. Latent space modelling of patent citations

The PhD project focuses on preparing the technical tools consisting of pre-processing the patent-citation data, developing the inference tools and applying the computational analysis techniques on the EPO and USPTO patent citation data. We are looking to recruit a PhD student with a background in statistical modelling and with a strong interest in and appreciation for applications. Jointly with the post-doctoral researcher, the PhD student will develop the companion R-package to the project.

How to apply

For the PhD position, you require a master's degree in statistics, data science, AI, mathematics or a related subject.

For the Postdoc position priority will be given candidates with a PhD in quantitative social science (e.g., sociology, economics, or management or social network analysis) with a demonstrated interest in the study of innovation and technological change.

We aim to fill the positions by **1 January 2021** at the latest. The deadline for application is **15 October 2020, or until filled**.

Application material for PhD students can be found on:[Link](#). In particular, for either PhD or Postdoc position, please send us:

- Copy of previous qualifications (PhD, MSc, BSc certificates)
- Official transcript of academic results
- Certified translation of any diplomas written in a language other than Italian, German, French, English, or Spanish
- Curriculum Vitae (Resume)
- A one- or two-page statement of purpose, written in English and describing: the applicant's motivation for obtaining a Ph.D. degree; how the applicant acquired fluency in English; any particular research interests; any prior research experience;
- One sample of published work
- Photocopy of relevant pages of passport or ID card
- Photocopy of residence permit for foreign nationals already domiciled in Switzerland
- 2 letters of recommendation

Send a copy of your application material directly to Prof. EC Wit wite@usi.ch and Prof. A. Lomi alessandro.lomi@usi.ch. You can also email them directly for any questions.

The group in the Institute of Computational Science consists of 8 PhD students, 2 postdocs and 3 professors.

Applications received before October 15, 2020, will be given priority. However, applications will be received until the position is filled.

Lugano, October 6, 2020