PhD Position in the Intersection of Data Science and Statistical Development of Social Modeling, 4 year

The Social Computing Group at the University of Zurich, led by Prof. Aniko Hannak, will be hosting the four-year SNF Ambizione project awarded to Dr. Zachary Roman beginning September 1st, 2024. The project titled "Striding Towards Multidimensional Place and Social Space; Advancing Statistical Modeling Approaches for Social and Spatial Spillover in Latent Variable Models" focuses on the development of a novel statistical framework designed for understanding the interaction of social (or spatial) cases within a latent variable modeling framework. The project will culminate in the creation of an open source software package to make the framework accessible to applied researchers. The project will further develope the framework established in:

Roman, Z. J., & Brandt, H. (2023). A latent auto-regressive approach for bayesian structural equation modeling of spatially or socially dependent data. *Multivariate behavioral research*, 58(1), 90-114.

Dr. Roman is hiring a PhD for the duration of the project and will provide doctoral supervision under Prof. Dr. Aniko Hannak's oversight.

Your Responsibilities

This position will emphasize developing applied statistical approaches and using programming skills to acquire social media data to exemplify the approaches. You will work on projects related to the SNF funded research grant HERE.

Generally speaking, this position will emphasize statistical model development and deployment. Specifically, latent variable modeling and spatial/ social network auto-regressive approaches. You will assess model performance with Monte-Carlo (simulation) studies and convey the findings as recommendations to applied researchers. In addition, this position will also emphasize the use of programming (R or python) to scrape social media data for exemplifying the frameworks many applications. This position will also be responsible for contributing to the development of the open source software (R) package.

The position will involve participation in academic conferences and workshops around Europe and the United States. Conference travel will be paid for by the project funds.

Your Profile

- You have a Master's degree (obtained by September 2024) and a background in applied statistics, the social sciences, econometrics, or computer science
- You have a strong computational and/or analytic background
- You have a background in programming with R and/or Python
- You have an interest in learning and developing advanced statistical techniques, specifically latent variable modeling and spatial/social auto-regressive modeling; prior experience in either is a plus
- Bayesian modeling and software experience is a plus (Stan or Jags)
- Experience developing open source software is a plus
- Knowledge of web-scraping (specifically social media data) and API's are a plus
- You enjoy solving open-ended problems with creative solutions
- You are a highly motivated team player
- You are an excellent communicator in both written and spoken English, as English is the team's working language; knowledge of a national language of Switzerland is a plus

What We Offer

- Four-year PhD funding, with salary in accordance with the regulations of the Swiss National Science Foundation. More information can be found HERE.
- Excellent research conditions in Zurich, including access to state-of-the-art equipment, high-performance computing infrastructure, and shared facilities.
- Working with a diverse international and interdisciplinary team of researchers in an inclusive environment. Currently, the research group consists of 10 researchers (and growing) with backgrounds ranging from mathematics, applied statistics, and computer science, to psychology and communication science.
- Option to apply for the DSI PhD Excellence Program

Location of Work

- Andreasstrasse 15 8005 Zurich, Switzerland

Start of Emplyoment

Expected starting date is September 1, 2024 (this can be slightly delayed upon mutual consent). Please submit your complete application including CV, motivation letter, 2 letters of reference, and an academic writing sample (e.g., a chapter from a Master's thesis or a term paper), **compiled in a single pdf file** by email to Dr. Zachary Roman (ZacharyJoseph.roman@uzh.ch) and CC Prof. Dr. Aniko Hannak (hannak@ifi.uzh.ch). Applications will go under review in early May and will be accepted on a rolling basis until the position is filled. Interviews will take place in June 2024.