



Postdoctoral Researcher in Modeling Intraindividual Learning Trajectories with Intensive Longitudinal Data

The Institute of Education at the University of Zurich is accepting applications for a Postdoctoral Researcher for modeling intensive longitudinal educational testing data. The work load is negotiable and the initial appointment will be until February 29, 2024. The position primarily involves work in the methodological research project "Modeling Developmental Trajectories with Intensive Longitudinal Data from Large-Scale Formative Assessments" funded by the Swiss National Science Foundation (PI: Prof. Dr. Martin Tomasik). It is a full research position with no teaching obligations, but teaching contracts can be negotiated to temporarily or permanently complement a part-time employment in the project.

Your Responsibilities

The successful candidate will collaborate in a team comprising another post-doctoral researcher and a PhD student. Against the backdrop of intensive longitudinal data from a computer-based tool for formative student assessment (see Tomasik, Berger & Moser, 2019, in *Frontiers of Education*), the successful candidate will apply and develop methods for modelling intraindividual learning trajectories and assessment characteristics across different subject domains, investigate patterns of heterogeneity in these trajectories, study the longitudinal dynamics between concepts and content domains, and investigate contextual factors predicting learning trajectories. A significant portion of the working time will be devoted to prepare the results of this modelling for publication in scientific journals and presentation at international conferences. The successful candidate might also be involved in mentoring a doctoral student.

Your Qualification Requirements

Qualified candidates should be self-driven and highly motivated individuals with an established track record, including first-author publications in top-tier international journals. They should have a good statistical and/or computational background in order to apply and contribute to development of methods such as item response theory, time-series analysis, dynamic systems, growth curve modelling and/or other related methods capable of separating between-person and within-person variance, in order to study interindividual differences in intraindividual change. A solid knowledge of item response theory, good command of machine learning approaches, and programming skills (e.g., R, Python, C/C++, MATLAB) are a strong advantage. The successful candidate should have obtained a doctoral degree in psychology, mathematics, statistics, computer science, psychometrics, developmental measurement or educational measurement no longer than seven years ago and bring along some experience – or at least strong interest – in developmental and/or educational research. A good command of English and/or German (as the working languages in the project) is mandatory, familiarity with any of the other national languages (i.e., French and Italian) could be helpful.



Our Offer

We offer great working conditions on a unique data set ($N \approx 100.000$) and the opportunity to significantly expand one's publication record. This interdisciplinary research project is conducted in collaboration with leaders in the field of machine learning, signal processing theory, computational social science, and data analytics. The University of Zurich provides great opportunities for networking within and beyond the Digital Society Initiative (see <https://www.dsi.uzh.ch/>). The Institute offers an attractive salary plus a very generous social benefits package, five weeks of paid vacation per year, flexible working hours as well as a highly motivated and supportive team of scientific and non-scientific personnel.

Application Procedure

To apply for this position, please submit in one single PDF file (1) a cover letter describing your past training and your future research goals, highlighting why your background and interests are a good match for the position, (2) a one-page curriculum vitae, (3) a full list of publications, (4) a copy of the doctoral certificate, and (5) three writing samples (i.e., papers published or accepted for publication) to Prof. Dr. Martin Tomasik (martin.tomasik@ife.uzh.ch). Letters of reference (if available) may be sent directly to Prof. Dr. Martin Tomasik. Review of applications will begin immediately and continue until the position is filled. Interested applicants are strongly encouraged to submit their applications at their earliest convenience. Preferred starting date is as soon as possible. Confidential inquiries concerning this vacancy may either be directed to Prof. Dr. Martin Tomasik or Dr. Charles Driver (charles.driver@ife.uzh.ch).

About Us

The research project is situated at the Chair of Methods for Developmental and Educational Research within the Institute of Education (IFE) at University of Zurich. The IFE is the largest educational science institute in Switzerland and conducts basic and applied research on central scientific and social issues in formal, non-formal, and informal educational contexts such as school, family, the work environment, or youth work (see <https://www.ife.uzh.ch/en.html>). The Institute for Educational Evaluation (IBE) is a close collaboration partner, and is mainly engaged in the field of standardized performance measurement. It carries out school effectiveness studies as well as educational surveys and longitudinal studies relevant to education. The IBE also develops software for large-scale adaptive testing and formative assessment (see <https://www.mindsteps.ch/>) which is implemented in several cantons of Switzerland and also used for research purposes. Located close to downtown Zurich and only seven minutes from the main station, the Institute is perfectly accessible by public transportation. The city of Zurich itself has consecutively been awarded "city with the world's best quality of life" seven times on Mercer research. With its culture, nature and urban-style living, it offers numerous opportunities for leisure and social life.