Universität Zürich[UZH]

Institut für Politikwissenschaft

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**Research Assistant / Hilfsassistent:in Position (20-40%)**

Zürich, 6. February 2025

**Description of UZH unit**

The Department of Political Science at the University of Zurich (http://www.ipz.uzh.ch) invites applications for a fixed-term of 7 weeks (10 hours/week). An extension of up to 27 weeks is possible, contingent on the project receiving the required funding. The position as Research Assistant starts on March 1, 2025 (or upon agreement) and is part of the research project "On the Social Origins of Political Selection" (see more here), led by MSc. Felipe Perilla Reyes at the Chair of Political Institutions and European Government, under the supervision of professor Jonathan Slapin.

**Your responsibilities**

This position supports the computational aspects of the research project, which aims to understand whether and how elite kinship networks influenced the selection of Colombian presidential candidates between 1833 and 1934. The primary responsibilities of the student assistant will include *supporting* the project in the following tasks:

- Developing a flowchart clarifying the structure and function of the current relation and event extraction code and documentation.
- Adjusting the information extraction system to work with on-device LLMs rather than relying solely on ChatGPT's API.
- Implementing intra- and inter-coder reliability metrics (i.e., Krippendorff's alpha) on hand-labeled relations and events.
- Qualitatively and quantitatively (i.e., F1 and Jacqard index) assessing results across LLMs using the already hand-labeled random sample of relations and events.
- Implementing final adjustments on RAG before running across all relevant sources and LLMs.
- Running the RAG-based information extraction system across all relevant sources and LLMs.

- Conditional on progress and the availability of additional funds, additional tasks may include:

    - Fine-tuning LLM using hand-labeled relations and events.
    - Creating and populating a relational database using the resulting relational data
    - Conducting performance assessments
    - Turning the information extraction system into a Python package.
    - Reviewing literature on bayesian record linkage and knowledge graphs.
    - Developing a record linkage system using knowledge graph and bayesian methods.
    - Turning the record linkage system into a Python package.
    - Implementing quality control within the Python package.

**Your profile**

This position is ideal for MSc students who are able to commit to the research project for an extended period (ideally at least six months). Proactive candidates with a strong interest in NLP-based information extraction and record linkage are particularly encouraged to apply.

- Currently enrolled in an MSc program in Computer Science, Computational Linguistics, Data Science, or a related field at a Swiss university (related fields will be considered based on fit).
- Experience in Natural Language Processing, particularly in information extraction.
- Strong Python programming skills with the ability to develop and maintain code efficiently.
- Familiarity with machine learning techniques, including working with Large Language Models.
- SQL knowledge is highly valued for database management and data processing tasks.
- Experience with knowledge graphs and Bayesian statistics is a plus.
- Fluency in Spanish is preferred (not necessary) due to the nature of the data involved.

**What we offer**

- The opportunity to work on an innovative, cutting-edge and interdisciplinary research project.
- Hands-on experience in academic research, offering valuable insights into the latest developments in computational social science.
- Access to research infrastructure to support personal projects, such as MSc theses.
- A dedicated workspace at the Department of Political Science within the shared student assistant desk pool.

**Place of work**

Remote, in-office (Zurich – Oerlikon), or hybrid work arrangements are possible.

**Start of employment**

The starting date for this position is March 1, 2025, or by agreement.

**How to apply**

If you are interested in applying for this position, please upload your application, including motivation letter, CV, proof of academic performance and (if available) a writing sample (e.g., seminar / research paper) to www.ipz.uzh.ch/de/ueber-uns/offene-stellen/2025-RA-Slapin.html.

**Further information**

If you are interested in applying for this position, please upload your application, including motivation letter, CV, and (if available) portfolio of relevant NLP projects to www.ipz.uzh.ch/de/ueber-uns/offene-stellen/2025-RA-Slapin.html

The review of applications will begin after February 7, 2025, and continue until the position is filled. Interviews will likely take place in mid February and will take place online.
For informal inquiries, please contact MSc. Felipe Perilla Reyes (felipe.perilla@ipz.uzh.ch).