

Research Assistant Position (HEC – IP Paris)

Supervisors:

- **Pavlo Mozharovskyi**
Professor of Machine Learning at Telecom Paris, IP Paris
Member of Team Signal, Statistique, Apprentissage (S2A) within
Information Processing and Communication Laboratory (LTCI)
[Pavlo Mozharovskyi's Profile](#)
- **Aluna Wang**
Assistant Professor of Accounting and Management Control at HEC
Chairholder at Hi! PARIS Center on Data Analytics and Artificial Intelligence
[Aluna Wang's Profile](#)

Project Description:

This project focuses on applying anomaly detection, a branch of machine learning, to identify fraudulent transactions within financial records (such as those related to embezzlement, unauthorized trading, and accounting fraud), particularly in the context of journal entries of large corporations (grands livres, *i.e.*, general ledgers). The key challenge lies in the unique nature of the data, which can be represented as graphs where metadata holds equal importance to the graph structure itself, making it difficult to process using even state-of-the-art methods.

The primary responsibilities of the research assistant will include:

1. Implementing and testing the methodology developed by the supervisors on real-world financial datasets from industry partners.
2. Utilizing parallelization mechanisms and high-performance computing (HPC) to optimize the implementation.
3. Extending the application of the methodology to additional graph-metadata examples, time permitting.

Requirements:

- Strong academic background in statistics and/or machine learning/artificial intelligence.

- Having completed at least 3 years of university education or at least 1 year of an engineering school (Grande École) education
- Proficiency in Python and/or R/C++.
- Proficiency in English is highly preferred.

Application Materials:

- Curriculum Vitae
- Motivation letter
- Academic transcripts from university and/or Grande École studies

Project Duration: 6 months

Starting Date: Flexible, to be determined upon agreement

Application Deadline: July 31, 2024

To apply, please submit your application materials to anomalydetectionra@gmail.com with the subject line "RA Application."

For further information or inquiries, please contact Professor Pavlo Mozharovskyi at pavlo.mozharovskyi@telecom-paris.fr

or Professor Aluna Wang at wanga@hec.fr.