

PhD Position in MSCA European Doctorate Network “Learning from Multiple Representations: Theoretical Foundations”

Job Information

Organisation/Company: Poznan University of Technology

Department: The Institute of Computing Science

Research Field: Computer science

Researcher Profile: First Stage Researcher (R1)

Position: Research Assistant

Country: Poland

Application Deadline: June 19, 2023

Type of Contract: Temporary employment contract

Job Status: Full-time

Hours Per Week: 40

Is the job funded through the EU: Horizon Europe / Marie Skłodowska-Curie Actions

Is the Job related to staff position within a Research Infrastructure? No

Offer Description

[The Machine Learning Laboratory](#) of the [Institute of Computing Science](#) at Poznan University of Technology (PUT), Poznań, Poland, offers a **full-time position** in the MSCA European Doctoral Network LEMUR starting on the **1st of October, 2023**. The position is limited to three years and is designed to pursue a Ph.D. degree, which is expected to be obtained within four years. The position holder in the LEMUR project will be enrolled in the PhD program of the Department of Computing and Telecommunication at PUT under supervision of prof. [Wojciech Kotłowski](#).

Objectives:

The project pursued by the candidate will focus on the theoretical foundation of learning with multiple representations (LMR). LMR refers to machine learning methods that leverage several representations of the data and models or several formalizations of the learning task simultaneously, orchestrate them in a coordinated fashion, and use them in a synergistic way to solve a single problem. Multiple representations can interact in different ways and exchange information at various levels (e.g., data, model, prediction) and stages of the learning process.

Specifically, the position holder (so-called Early Stage Researchers (ESRs)) will focus on the theory of machine learning and will work on the performance guarantees with multiple representations:

- Performance analysis in the multi-view / transfer learning setting
- Analysis of various types of feedback information in learning, its transferability and robustness

- Multiple representation in the online learning framework

The candidate will contribute to the research conducted in the Machine Learning Group at the Institute of Computing Science, collaborating with researchers in machine learning, AI, and statistical data analysis. The candidate is also expected to get involved in the cooperation with secondment partners of the Doctoral Network (DN), participation in DN events, such as workshops summer schools, and cooperation with international project partners.

LEMUR: Learning with Multiple Representations

This position is a part the European project LEMUR (Learning with Multiple Representations) funded by (Marie Skłodowska-Curie Actions) Doctoral Network (DN) 2021.

The goal of LEMUR is to develop the theoretical foundations and a first set of algorithms for the new “Learning with Multiple Representations” (LMR) paradigm. Specifically, LMR algorithms will allow flexible representations (e.g., suitable for explainability, fairness, ...) with diverse target functions (e.g., incorporating environmental or even social impact) to make the induced models abide by the Green Charter and trustworthy AI criteria by design. The objective of MSCA Doctoral Networks is to implement doctoral programmes by partnerships of organizations from different sectors across Europe and beyond to train highly skilled doctoral candidates, stimulate their creativity, enhance their innovation capacities and boost their employability in the long-term. The outcome of the DN will be a set of 10 experts trained to implement the third and subsequent waves of AI in Europe.

Requirements

Research Field: Computer Science, Artificial Intelligence, Mathematics, or technically equivalent field of research

Education Level: A (prospective) Master Degree or equivalent

Languages: English

Skills/Qualifications:

- Ideal candidates should have a strong background in mathematics (with emphasis on probability and statistics) in that they should be able to formalize problems and reason rigorously in a mathematical framework
- Background knowledge and interest in machine learning
- Ability and willingness to work in a collaborative team
- Fluent written and oral English language skills
- Good communication skills
- Being comfortable in programming

Eligibility criteria: You have not resided or carried out your main activity (work, studies etc) in Poland for more than 12 months in the 36 months immediately before the recruitment date (mobility rule of the EU)

Selection process

Interested candidates should submit their applications online through the EURAXESS or send them directly to prof. Wojciech Kotłowski at wkotlowski@cs.put.poznan.pl. The position is open

until filled. Selected applicants will be invited for an interview. A complete application should contain the following documents:

- A cover letter including a description of your research interests, your reasons to apply for the position, and your contact information. Please also indicate whether your profile can be forwarded to other potentially interested partners within the LEMUR network.
- Detailed CV in English, highlighting your achievements and fit to the applied position, potentially including your publications and a link to code examples (e.g. GitHub)
- Authenticated copies of BSc/MSc degree certificates, including documentation of completed academic courses and obtained grades.
- Copies of English language certificates

Please contact prof. Wojciech Kotłowski at wkotlowski@cs.put.poznan.pl if you have any questions.

Additional information

The selected candidate will be employed for three years at Poznan University of Technology, Poznan, Poland. The salary for the post corresponds to the 2021 MSCA Doctoral Network funding model and includes (all figures are **gross pay per month in EUR** before taxes and other deductions are made, and will be paid in PLN according to the exchange rate):

- Living allowance of **€2397 / month**,
- Mobility allowance of **€600 / month**,
- Family allowance if applicable.

Poznan University of Technology is committed to promoting inclusivity, diversity, and equality, as well as the elimination of all forms of discrimination in order to provide a fair, safe, and pleasant environment for the entire university community.

Applications from women are particularly welcome.

Work Location

Poznan University of Technology (PUT) has several research teams that are actively pursuing research in intelligent decision support systems, artificial intelligence, machine learning and computer vision, in particular online learning, learning from data streams, classifying complex data, multi-label classification, and perception methods in computer vision and robotics. In the last years, the researchers have published over 100 papers in top AI and ML conferences, and leading journals; they also obtained 18 European and US patents, while the contributions elaborated in publications and patents have been applied in numerous R&D projects conducted with business partners. PUT has extensive experience in obtaining and managing European and national projects in cooperation with international partners. In previous years, PUT conducted 29 Seventh Framework Programme projects (6 as a leader), 17 projects within Horizon 2020, and many national ones.

PUT has in its possession a range of well-equipped research and educational laboratories acquired within past and ongoing projects. The laboratories feature diversified appliances, some

of them unique nation-wide, and facilitate both ongoing fundamental research in AI and ML, as well as applications in various areas.

PUT occupies a large, modern campus located at the city center, within walking distance to the historic center of Poznań. The ESR will be provided a well-equipped office space on the campus with access to specialized laboratories, seminar rooms and libraries. PUT declares extensive administrative and organizational support for the ESR.



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Information clause

In accordance with Art. 13 of the Regulation of the European Parliament and of the Council (EU) 2016/679 of 27 April 2016 on the protection of individuals with regard to the processing of personal data and on the free movement of such data and repealing Directive 95/46 /EC (hereinafter referred to as GDPR) we inform that:

1. The administrator of your personal data is **Poznan University of Technology** located at **Pl. Marii Skłodowskiej - Curie 5, 60-965 Poznań** e-mail: biuro.rektora@put.poznan.pl, phone: 61 665 3639.
2. Contact details of the Data Protection Inspector - Piotr Otomański, e-mail: iod@put.poznan.pl,
3. Your personal data will be processed in order to carry out the recruitment process; the legal basis for the processing of your personal data is voluntarily and knowingly expressed by your consent according to art. 6 section 1 (b) GDPR.
4. Personal data will not be passed on to processing entities (**art. 28 section 1 GDPR**). They can be only transferred only to bodies authorized by law.
5. Personal data will be kept for the period of the recruitment process or until you withdraw your prior consent, but its withdrawal does not affect the legality of the processing which was carried out on the basis of consent before its withdrawal.
6. You have the right to access your personal data, the right to rectify them, the right to transfer them, and if applicable, also to remove them, to limit processing and the right to object to processing.
7. You have the right to lodge a complaint with the President of the Office for Personal Data Protection when you feel that the processing of your personal data violates the provisions of the General Data Protection Regulation of 27 April 2016 (GDPR).
8. Providing by you your personal data is voluntary, however, the consequence of not providing personal data may lead to inability to consider your candidacy for a vacancy.
9. Your data will not be processed in an automated way, including profiling.