

CALL FOR PHD POSITION

3 PHD POSITIONS IN "TUAI PROJECT" - Towards an Understanding of Artificial Intelligence via a transparent, open and explainable perspective

HORIZON-MSCA-2023-DN-01

Marie Skłodowska-Curie Actions - MSCA Doctoral Networks 2023 Developing talents, advancing research

Position Title: Early Stage Researcher (PhD Student)

Project: TUAI - Towards an Understanding of Artificial Intelligence via a transparent, open and explainable perspective (Doctoral Network, EU MSCA Project)

Type of Action: HORIZON-MSCA-Doctoral Networks 2023

Application deadline: 31 January, 2025. However, early applications are preferred as positions will be filled on a first-come, first-served basis

Expected Start date: Candidates should be confirmed by 1 June, 2025, with the possibility of earlier enrollment

Salary level: Remuneration is offered in accordance with the EU MSCA Doctoral Network guidelines and Marie Skłodowska-Curie standards, ensuring an attractive and competitive salary package for doctoral candidates

How to Apply: modal.unina.hiring@gmail.com (see the "How to Apply" section below)

Host Institutions: The project is coordinated by a consortium of leading universities and research institutes across Italy, Spain, Norway, and Poland, in partnership with prominent industry collaborators.

Project Overview

The TUAI project aims to foster a new generation of researchers with a comprehensive understanding of Artificial Intelligence (AI) by promoting a transparent, open, and explainable perspective. The selected Early Stage Researchers (ESRs) will work on innovative research topics that bridge the gap between technical AI advancements and societal needs, ensuring that AI systems are designed and deployed ethically, responsibly, and inclusively.

Job Description

Successful candidates will be involved in the following activities:

- Conduct research within the scope of transparent and explainable AI, with a particular focus on federated learning, graph neural networks, generative approaches and others to enhance the interpretability and usability of AI systems.
- Collaborate with a multidisciplinary team of researchers and industry experts across Europe.
- Participate in research training courses, workshops, and summer schools to further develop skills and expertise.
- Contribute to the dissemination and communication of research findings within academic and non-academic settings, including presenting at top-tier conferences.

- **IMPORTANT:** This is a **full-time, on-site** position based at the M.O.D.A.L. lab. (<https://www.labdma.unina.it>), Department of Mathematics and Applications "R. Caccioppoli", University of Naples Federico II, Italy.

Eligibility Criteria

- Must not have resided or carried out their main activity (work, studies, etc.) in the country of the host institution for more than 12 months in the 3 years immediately prior to the recruitment date.

- Must hold a Master's degree in a relevant field (e.g., Artificial Intelligence, Computer Science, Data Science, Mathematics, Engineering, or related disciplines) by the start date of the position.

Applicants who have already completed a PhD are not eligible.

- Demonstrated deep scientific and technical knowledge, evidenced by publications or successful projects, in one or more of the following areas:

- Machine learning and neural network architectures (e.g., convolutional, recurrent, and transformer networks)
- Generative AI
- Federated Learning
- Graph Neural Network
- Large Language Models
- Scientific Machine Learning
- Big data technologies and tools, with the capability to work with large datasets to derive predictive analytics and insights
- Familiarity with the latest AI trends and developments, and the ability to apply these advances to practical, real-world challenges

- Proficiency in Python is mandatory. Knowledge of additional programming languages such as C++, R, or Rust is considered a plus.

- Proficiency in using key Machine Learning and Deep Learning frameworks, particularly TensorFlow and PyTorch, is required.

- Familiarity with Visual Studio and its integration with relevant programming languages.

- Strong knowledge of Linux systems.

- Experience using version control systems such as Git, GitHub, GitLab, or similar tools for collaborative software development and version management.

- An excellent academic record and proficiency in English (both written and spoken) at a minimum B2 level according to the European Framework of Reference. Proficiency will be assessed during the interview, and proof of language competency (e.g., certificate) may be required.

Remuneration

The successful candidate will receive an attractive salary (around 3.3K) in accordance with the MSCA regulations for Early-Stage Researchers. The exact (net) salary will be confirmed upon appointment and is dependent on local tax regulations and on the country correction factor (to allow for the difference in cost of living in different EU Member States). In addition to the base salary, there are additional allowances provided, such as a living allowance, a mobility allowance

and a family allowance (if applicable), which further increase the total compensation package. Furthermore, TUAI will offer to take advantage of joint scientific research trainings, transferable skills workshops, and international conferences. For more information about the project and consortium contact us (email below).

Additional Benefits

- International Research Environment: Join the dynamic and vibrant M.O.D.A.L. lab (<https://www.labdma.unina.it>), an international research hub that fosters collaboration across academic and industry sectors, providing an enriching environment for professional and personal growth.
- Mobility and Collaboration: Experience mobility across prestigious partner institutions and industry partners in multiple countries, gaining exposure to diverse research methodologies and collaborative projects.
- Living in Naples: Enjoy living in the enchanting city of Naples, renowned for its rich history, cultural heritage, gastronomy and vibrant lifestyle, all while benefiting from a comparatively affordable cost of living. Naples is a vibrant and bustling city located on the southwest coast, nestled in a stunning gulf and surrounded by renowned tourist and archaeological sites such as Capri, Ischia, the Amalfi Coast, Pompeii, Herculaneum, and Mount Vesuvius. For more information, visit <https://www.visitnaples.eu/en>.

How to Apply

Interested candidates should submit the following documents to modal.unina.hiring@gmail.com with the email subject: "TUAI - Name Surname" (e.g., "TUAI - John Doe"):

1. A detailed and updated scientific CV, including your contact information, and highlighting educational qualifications (e.g., Laurea degrees), relevant professional experience (e.g., internships), programming languages known, and tools or technologies used. Please highlight starting availability. The CV should be saved as name_surname.pdf (e.g., john_doe.pdf).
2. A motivation letter (maximum 2 pages) highlighting your experience and alignment with the ESR position. Alternatively, you may provide a video motivation (maximum 2 minutes). While the video format is preferred, it is not mandatory. However, the written motivation letter is **compulsory**. If submitting a video, please include a link to the video rather than attaching it directly to the email.
3. Name and contact details of at least one referee who would be willing to write a letter of support for your application or being contacted.
4. Copies of your degree certificates and academic transcripts. In case, MSc is to be completed before the starting of this position, please provide expected final grade and completion date and availability.
5. List of publications and patents (if applicable).
6. Any English language and other relevant certificates (if applicable).
7. **MANDATORY APPLICATION FORM**: Complete the application form available at <https://forms.gle/4UapoajGZ5Mezruk7>. Submission of this form is **compulsory**. Applicants who complete steps 1-6 but do not fill out the form will **not** be considered for the position. Please ensure that all information provided in the form is truthful, as it will be thoroughly reviewed and verified during the interview process!

Selection Process

The selection process will consist of the following stages:

Initial Screening:

Candidates whose profiles are deemed a good fit based on CV screening and evaluation of their motivation letter or video will be invited to a two-stage interview process.

Two-Step Interview Process:

First Interview: This will be an introductory and technical/theoretical interview aimed at assessing the candidate's knowledge in the relevant research areas and evaluating their proficiency in English.

Final Technical Interview: Candidates who successfully pass the first stage will proceed to a more in-depth technical interview. During this session, candidates will be asked to complete real-time programming tasks or similar practical exercises to demonstrate their coding skills and problem-solving abilities. This stage will assess hands-on expertise in programming languages, machine learning frameworks, and the ability to solve complex technical challenges under timed conditions, including tasks such as connecting to remote servers, using version control systems like Git, and troubleshooting technical issues.

There will be a series of interview rounds held approximately twice a month. Successful candidates will be included in the nearest round upon receipt and evaluation of their application. The tentative date for the first batch of interviews is October 28, 2024, but this may vary depending on the number of applications received. Candidates will be notified via email whether they have been selected to proceed to the interview stage or if, unfortunately, their profile is not considered suitable for the position at this time.

Application Conditions and Equal Opportunity

We kindly ask applicants to provide their nationality and gender for statistical purposes only, as part of our commitment to promoting diversity and ensuring equal opportunities within our workforce. This information will be kept strictly confidential and will not be used in any discriminatory manner. All applications will be considered impartially, without discrimination based on nationality, race, color, gender, sexual orientation, gender identity, marital status, religion, age, or disability.

Applications will be reviewed on an ongoing basis until the position is filled. The selection process will be carried out by an assessment committee that follows guidelines designed to ensure equal opportunity for all candidates. The primary criteria for selection will be the alignment of the applicant's qualifications and expertise with the specified requirements. Female candidates are particularly encouraged to apply, as gender balance will be taken into consideration during the evaluation process to support women's representation in science and research fields.

TUAI Organizing Committee

Prof. Francesco Piccialli (Principal Investigator)

Prof. Salvatore Cuomo

Prof. Carlo Nitsch



Marie
Skłodowska-
Curie Actions



M.O.D.A.L
MATHEMATICAL MODeLLING AND DATA ANALYSIS
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