

**Research Assistants (m/w/d)
in the field of Open Source Intelligence/Online Fairness-aware-learning
at the Research Institute CODE**

(Remuneration according to pay group E13 TVöD)

wanted for the next possible date for a limited period of 2 years (with the possibility of extension to a total of 4 years) in full-time.

At the **Universität der Bundeswehr München** the research institute "Cyber Defence and Smart Data" (RI CODE) is being expanded to become one of the largest research institutes in the field of IT security in Europe. Its goal is to realise innovative technical innovations and concepts for the protection of data, software and IT systems. For more information about CODE, please visit www.unibw.de/code.

As part of a new professorship, Prof. Dr. Eirini Ntoutsi will establish a research lab for "**Artificial Intelligence & Machine Learning**" (AIML) at RI CODE and the Faculty of Computer Science starting in August 2022 to research and develop methods and algorithms for (data-driven) Artificial Intelligence. The goal of the lab (<https://aiml-research.github.io/>) can be summarized as designing intelligent algorithms that learn from data continuously following the cumulative nature of human learning, while ensuring that what has been learned helps driving positive societal impact. We are currently offering positions in the areas of adaptive learning, responsible AI and generative AI.

The focus of this position is on fairness-aware learning. Algorithmic-based decision making powered via AI and (big) data has already penetrated into almost all spheres of human life, from content recommendation and healthcare to predictive policing and autonomous driving, deeply affecting everyone, anywhere, anytime. While technology allows previously unthinkable optimizations in the automation of expensive human decision making, the risks that the technology can pose are also high, leading to an ever increasing public concern about the impact of the technology in our lives. One important concern is whether these algorithms can affect different population subgroups differently. There exist already examples of algorithms which lead to biased outcomes and discrimination, reproducing and even amplifying inequalities already present in the society. The domain of fairness-aware machine learning focuses on methods and algorithms for understanding bias, mitigating bias and accounting for bias in AI/ML models. In this position we will focus on fairness for sequential data and data streams. In such environments, models need to be updated due to changes in the underlying data. Therefore, fairness cannot be a one-time requirement, but solutions for continuous model monitoring and online bias mitigation should be developed.

Your tasks:

- Research and development of AI/ML methods
- Experimental evaluation of AI/ML methods, including prototype development
- Literature review
- Publication and presentation of scientific results in international conferences and related journals
- Contribution to the teaching activities of the group
- Contribution to the research activities of the group

Requirements:

- Applicants should hold an M.Sc. or Diploma in Computer Science or a related discipline

Desirable:

- Strong background in Machine Learning, Artificial Intelligence and Data Mining techniques
- Strong programming skills (preferably Python)
- Very good knowledge of AI frameworks like TensorFlow, PyTorch, Keras
- Strong interest on aspects of responsible AI, esp. fairness
- Experience with fairness-aware machine learning

- Experience with sequential data / temporal data / non-stationary data / data streams
- Experience with online learning / adaptive learning / continual learning / data stream mining
- Excellent written and verbal communication skills in English (shown for example by published work or a master thesis)
- Knowledge of German is a plus, but is not obligatory
- Critical thinking, quality-oriented and independent work, professional commitment
- Willingness to learn, creative and cooperative

We offer:

- An optimal research and supervision environment for doctoral studies and academic development, excellent networking opportunities
- Pleasant working environment in a friendly and committed team
- State-of-the-art IT equipment
- Active promotion of your scientific development and your doctorate
- Multi-year contract with the aim of extension according to the Wissenschaftszeitvertragsgesetz
- Possibility of further training in higher education didactics and certification
- Grouping into pay group E13 is carried out in compliance with § 12 TVöD with regard of the actual activities to be performed and the fulfillment of the personal and collective agreement requirements
- In the case of corresponding qualifications and the transfer of corresponding higher-value activities, classification in pay group E14 is possible
- Mobile working is possible after consultation with the head of the department
- Attractive, diverse sports facilities on campus, as well as the general advantages of the Munich metropolitan region in terms of high quality of life and varied leisure activities, a campus university with a very good infrastructure, in-house crèche and kindergarten (parent initiative)

The employment can also be part-time if desired. The Universität der Bundeswehr München aims to increase the proportion of female scientists and employees; applications from women are expressly welcomed. Persons with disabilities will be given special consideration if they are equally qualified.

Have we aroused your interest?

Then send your application with the usual documents (cover letter, résumé, certificates) in PDF format by e-mail with the subject line "Application AI/ML – Fairness" to:

eirini.ntoutsi@unibw.de

By submitting your application, you agree that your personal data may be stored, processed and forwarded to the departments involved in the application process for the purposes of the application. You can find more information on data protection under the following link:
<https://www.unibw.de/home/footer/datenschutzerklaerung>

We are very much looking forward to your application!