The Leibniz Institute for Agricultural Engineering and Bioeconomy is a pioneer and a driver of bioeconomy research. We create the scientific foundation to transform agricultural, food, industrial, and energy systems into a comprehensive bio-based circular economy. We develop and integrate techniques, processes, and management strategies, effectively converging technologies to intelligently crosslink highly diverse bioeconomic production systems and to control them in a knowledge-based, adaptive, and largely automated manner. We conduct research in dialogue with society - knowledge-motivated and application-inspired.

Subject to funding approval, the following position is to be filled for the three-year main phase of the joint project **"REFRAME: Exploring and Expanding the Frontiers of Foundation", which is funded by the BMBF call "Flexible, resilient and efficient Machine Learning Models"**:

Scientist for the Doctorate (100 %)
Focus on Artificial Intelligence

Foundation models learn robust representations of the world; however, these representations often suffer from spurious correlations and biases. The REFRAME project seeks to address these issues by leveraging global explainable AI and mechanistic interpretability methods to identify and mitigate biases in foundational models.

We are looking for a dedicated researcher to develop innovative methods for detecting and mitigating biases in visual and multimodal foundation models.

This position is based in the Data Science in Bioeconomy Department at ATB, in close collaboration with Fraunhofer HHI and Bergische Universität Wuppertal.

Your responsibilities

- Work with state-of-the-art Vision and Multimodal Foundation Models
- Develop scalable AI methods for Bias Detection and Mitigation in Deep Neural Networks
- Author Scientific Papers and present findings at top-tier conferences
- Communicate and transfer project findings to partners

Your qualifications

- Successfully completed university degree (master, diploma, or equivalent) in computer science, physics, engineering, mathematics, or comparable field
- In-depth theoretical knowledge in Machine Learning, Statistics, Linear Algebra, Optimization and Algorithms
- Practical experience in applying Machine Learning, especially with Modern Foundation Models
- Strong programming skills in Python, with experience in Machine Learning and Linear Algebra Libraries (preferably PyTorch, also JAX, TensorFlow), experience in CUDA programming is advantageous
- Familiarity with Git and Linux
- Excellent written and spoken English skills, with a willingness to learn German

Preferred qualifications

- Experience in scientific research
- Familiarity with explainable AI and Mechanistic Interpretability Methods
- Participation and experience in olympiads (IMO, ICPC, and etc) or Kaggle competitions

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We offer

- Exciting research tasks in the field of machine learning with highly socially relevant fields of application
- The opportunity to make valuable contributions to cutting-edge AI research
- The opportunity to publish your papers in conference and journal publications
- The possibility of a doctorate (PhD)
- The opportunity to gain interdisciplinary knowledge from experts in diverse research areas
- A highly motivated, international team
- Flexible working hours and excellent equipment
- Supervision by experienced scientists
- Family-friendly working conditions that promote the compatibility of work and family life
- Close cooperation with the Berlin Institute for the Foundations of Learning and Data (BIFOLD), the research group Machine Learning of the HHI and the Institute of Computer Science of the University of Potsdam, the research group UMI lab, and many others
- Participation on the VBB company ticket or Deutschland ticket
- An easily accessible work place (bike, public transport) on the edge of a park-like landscape

About the position

Subject to funding approval, the position is expected to be filled from 1st October 2024 for a limited period of three years in accordance with the project duration. The salary is dependent on your qualifications and professional experience up to pay group 13 TV-L.

About the application process

For further information please contact **Prof. Dr. Marina Höhne** (E-Mail: mhoehne@atb-potsdam.de) and visit our website **www.atb-potsdam.de**.

If you would like to contribute your expertise to our interdisciplinary research, please apply by **August 25, 2024** using ATB's online application form for the job advertisement, reference code **2024-DS-3** at https://www.atb-potsdam.de/en/career/vacancies.

Equality of opportunity is part of our personnel policy. Disabled applicants with adequate qualifications will be preferentially considered.

By submitting an application, you agree that your job application documents will be stored for a period of six months, even in the case of an unsuccessful application. Further information on the processing, storage and protection of your personal data can be found at https://www.atb-potsdam.de/en/data-protection-declaration-for-the-application-process.

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