Elif Akata

PhD student @ Human-Centered AI Lab, Helmholtz Munich & University of Tübingen

✉ elif.akata@uni-tuebingen.de   🏠 eliaka.github.io   🎓 google scholar

Education

University of Tübingen   *10/2022 – present*
PhD Machine Learning & Cognitive Science   Munich, Germany

- Supervisors: Eric Schulz, Matthias Bethge
- International Max Planck Research School for Intelligent Systems (IMPRS-IS) Scholar

University of Tübingen   *10/2019 – 2/2022*
MSc Computer Science   Tübingen, Germany

- Thesis on attention detection in the classroom (Human-Centered Technologies for Learning Lab, supervised by Enkelejda Kasneci)

Saarland University   *10/2015 – 9/2019*
BSc Computer Science   Saarbrücken, Germany

- Thesis on EMG-based hand gesture recognition (Human-Computer Interaction Lab, supervised by Jürgen Steimle)

Research Experience

Research Assistant   *Tübingen*
Tübingen AI Center, Computational Neuroscience and Machine Learning Lab   *10/2021 – 9/2022*

- Developed computational creativity and generative art applications by programming the Boston Dynamics Spot robot with the Spot SDK to autonomously generate drawings.

Research Assistant   *Tübingen*
University of Tübingen, Human-Centered Technologies for Learning Lab   *8/2021 – 9/2021*

- Processed and analysed classroom activity data for an attention-based automated detection system.

Research Intern   *Stuttgart*
Max Planck Institute for Intelligent Systems, Haptic Intelligence   *9/2020 – 11/2020*

- Contributed to the sensor-specific component of an ASL sign-recognition device translating hand movements into text (Supervisor: Katherine Kuchenbecker)

Student Research Assistant   *Saarbrücken*
Max Planck Institute for Software Systems, Programming Analysis and Verification *5/2017 – 4/2019*

- Built benchmark programs for the Daisy numerical optimization framework and evaluated performance on resource-constrained hardware like Arduinos (Supervisor: Eva Darulova)

Publications

- **Akata, E.**, Schulz, L., Coda-Forno, J., Oh, S. J., Bethge, M., and Schulz, E. (2025). Playing repeated games with large language models. *Nature Human Behaviour. https://doi.org/10.1038/s41562-025-02172-y*

- Buschoff, L. M. S.*, **Akata, E.***, Bethge, M., and Schulz, E. (2025a). Visual cognition in multimodal large language models. *Nature Machine Intelligence. https://doi.org/10.1038/s42256-024-00963-y*

- Binz, M., **Akata, E.**, Bethge, M., et al. (2025). A foundation model to predict and capture human cognition. *Nature. https://doi.org/10.1038/s41586-025-09215-4*

- Buschoff, L. M. S.*, Voudouris, K.*, **Akata, E.**, Bethge, M., Tenenbaum, J. B., and Schulz, E. (2025b). Testing the limits of fine-tuning to improve reasoning in vision language models. *Forty-second International Conference on Machine Learning.*

Learning and Teaching

Brains, Minds & Machines Summer Course
MIT CBMM, Participant
Aug 2024
Woods Hole, USA

International Computer Vision Summer School (ICVSS)
University of Catania & University of Cambridge, Participant
Jul 2023
Sicily, Italy

Trustworthy Machine Learning
TA for a 6 Credit MSc lecture at University of Tübingen
WS 2022/2023
Tübingen, Germany

Invited Talks

Generative AI in Social Science Research Workshop
London School of Economics, hosted by the Department of Methodology
Jun 2024
London, UK

Experimental Psychology Departmental Talk
UCL, hosted by Maarten Speekenbrink
Jun 2024
London, UK

Awards

BMM 2024 Summer School Travel Grant & Scholarship
MIT Center for Brains, Minds and Machines, $3000
2024

Cyber Valley Start-up Incubation Program
Our startup concept won the Sustainability Award sponsored by Carl Zeiss Foundation, €2000
2023

Skills and Interests

Coding: Python, C/C++, PyTorch, Numpy, SciKit-Learn, Git, model fine-tuning (SFT, GRPO) on HPC

Drawing & Illustration (my design for our paper made the cover of Nature Machine Intelligence in January 2025)

Tennis (club player now and was decent as a junior with Edirne U12 #1 and Marmara U10 #3 rankings)