Elif Akata

Munich, Germany | Google Scholar | eliaka | @elifakata | elifakata | https://eliaka.github.io/

I'm a PhD student in machine learning and cognitive science. My research focuses on understanding how LLMs behave as social, collaborative agents and how we can design systems that effectively interact, adapt, and communicate with humans and each other in dynamic environments.

Education

University of Tübingen | ***Ph.D. Machine Learning & Cognitive Science*** — since Oct 2022
International Max Planck Research School for Intelligent Systems (IMPRS-IS) — *Tübingen & Munich, Germany*

University of Tübingen | ***M.Sc. Computer Science*** — Oct 2019 – Feb 2022
Thesis on automated attention detection in classroom videos (HCI Lab) — *Tübingen, Germany*

Saarland University | ***B.Sc. Computer Science*** — Oct 2015 – Sep 2019
Thesis on EMG-based hand gesture recognition system (HCI Lab) — *Saarbrücken, Germany*

Research Experience

Helmholtz Munich & University of Tübingen | *Ph.D. Researcher* — Oct 2022 – Present
Human-Centered AI Lab, supervised by Dr. Eric Schulz and Prof. Dr. Matthias Bethge

Tübingen AI Center | *Resesarch Assistant* — Oct 2021 – Sep 2022
In the Computational Neuroscience and Machine Learning lab of Prof. Dr. Matthias Bethge, I worked on computational creativity and generative art teaching the Boston Dynamics Spot robot how to paint.

University of Tübingen | *Resesarch Assistant* — Aug 2021 – Sep 2021
In the Human Computer Interaction lab of Prof. Dr. Enkelejda Kasneci, I processed and analysed data for an attention-based automated classroom activity detection system.

Max Planck Institute for Intelligent Systems | *Research Assistant* — Sep 2020 – Nov 2020
In the Haptic Intelligence department of Dr. Katherine Kuchenbecker, I worked on the sensor-specific part of an ASL sign-recognition device that translated hand movements to text.

Max Planck Institute for Software Systems | *Student Research Assistant* — May 2017 – Apr 2019
In the Programming Analysis and Verification group of Dr. Eva Darulova, I wrote benchmark programs for the Daisy numerical optimization framework and performed evaluations on Arduinos.

Teaching & Summer Schools

MIT Brains, Minds & Machines Summer Course | *Woods Hole, USA* — 2024
International Computer Vision Summer School (ICVSS) | *Sicily, Italy* — 2023
Trustworthy Machine Learning | *TA for a 6 Credit M.Sc. lecture at University of Tübingen* — 2023

Invited talks

University College London | *Experimental Psychology Department* — 2024
London School of Economics | *Generative AI in Social Science Research Workshop* — 2024

Skills

Languages: English (IELTS Academic Band 7.5), German (DSH-2, CEFR Level C1), Turkish (Native)

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

Selected Publications

1. **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*

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

3. 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*

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