

# Elisabeth Kirsten

Ruhr University Bochum, Germany

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## Personal Profile

I am a 2nd year PhD candidate at Ruhr University Bochum, where my research focuses on human-centric and responsible Large Language Models. I am passionate about societal impacts of AI systems as they scale across capabilities, domains, and human populations. I am dedicated to computer science, ethics, and sociology, addressing a range of issues such as AI alignment, safety, and fairness from a multidisciplinary perspective.

## Education

### Research Center Trustworthy Data Science & Security, Ruhr University Bochum

Bochum

PhD Candidate

Sep 2024 - Present

Supervised by Dr. Muhammad Bilal Zafar & Dr. Nicole Krämer

### Technische Universität Darmstadt

GPA 3.95

Master of Science in Computer Science

Oct 2021 - Sep 2024

• Relevant Coursework: Data Mining and Machine Learning, Artificial Intelligence, Deep Learning for NLP, Language Technology, Causality for AI

### Technische Universität Darmstadt

GPA: 3.74

Bachelor of Science in Computer Science

Oct 2018 - Mar 2022

• Thesis: A wearable touch interface for eyes-free control of smart-eyewear

## Achievements

2023 **Female Student Travel Award**, TU Darmstadt

2018-23 **Scholarship (Deutschlandstipendium)**, TU Darmstadt

## Work Experience

### Ruhr-University Bochum, Chair of Computing and Society

Bochum, Germany

Research Scientist

July 2024 - Present

• Conduct research on Human-Centric and Responsible Large Language Models.

### Max Planck Institute for Security and Privacy

Bochum, Germany

Research Intern

July 2023 - June 2024

• Researched LLM-supported methods for qualitative data analysis, supervised by Dr. Christof Paar & Dr. Steffen Becker.

### Ubiquitous Knowledge Processing (UKP) Lab

Darmstadt, Germany

Research Assistant

Feb 2023 - Dec 2023

• Researched automated code generation combining graph-based data, GNNs, and transformers via parameter-efficient fine-tuning.

### École polytechnique fédérale de Lausanne

Lausanne, Switzerland

Research Intern

July 2022 - Sep 2022

• Developed communication-efficient federated & decentralized learning algorithms, reducing communication overhead.

### Technische Universität Darmstadt

Darmstadt, Germany

Teaching Assistant

Oct 2019 - Feb 2023

• **Courses:** Foundations of Language Technology, Digital Design, Computer Organisation

## Publications

### CONFERENCE PROCEEDINGS

The Algorithmic Self-Portrait: Deconstructing Memory in ChatGPT

Abhisek Dash, Soumi Das, Elisabeth Kirsten, Qinyuan Wu, Sai Keerthana Karnam, Krishna P Gummadi, Thorsten Holz, Muhammad Bilal Zafar, Savvas Zannettou

To Appear in *The Web Conference* (2026). 2026

The Impact of Inference Acceleration on Bias of LLMs

Elisabeth Kirsten, Ivan Habernal, Vedant Nanda, Muhammad Bilal Zafar

*Proceedings of the 2025 Conference of the Nations of the Americas Chapter of the Association for Computational Linguistics: Human Language Technologies (Volume 1: Long Papers)*, 2025, Albuquerque, New Mexico

Position is Power: System Prompts as a Mechanism of Bias in Large Language Models (LLMs)

Anna Neumann, Elisabeth Kirsten, Muhammad Bilal Zafar, Jatinder Singh

*Proceedings of the 2025 ACM Conference on Fairness, Accountability, and Transparency, 2025*

## PREPRINTS

From Assistance to Autonomy—A Researcher Study on the Potential of AI Support for Qualitative Data Analysis

Elisabeth Kirsten, Annalina Buckmann, Leona Lassak, Nele Borgert, Abraham Mhaidli, Steffen Becker

*arXiv preprint arXiv:2501.19275 (2025). 2025*

Characterizing Web Search in The Age of Generative AI

Elisabeth Kirsten, Jost Grosse Perdekamp, Mihir Upadhyay, Krishna P Gummadi, Muhammad Bilal Zafar

*arXiv preprint arXiv:2510.11560 (2025). 2025*

Decoding Complexity: Exploring Human-AI Concordance in Qualitative Coding

Elisabeth Kirsten, Annalina Buckmann, Abraham Mhaidli, Steffen Becker

*arXiv preprint arXiv:2403.06607 (2024). 2024*

## Teaching

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### Engineering for Large Language Models

Summer 2025

Co-organized with Prof. Muhammad Bilal Zafar

### Programming for Modern Machine Learning

Summer 2025, Winter 2024-25

Co-organized with Prof. Muhammad Bilal Zafar and Prof. Nils Jansen

### Introduction to Data Science

Winter 2024-25

Co-organized with Prof. Muhammad Bilal Zafar

## Mentorship

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**2025 MS/BS Theses:** Leon Swazinna, Shaharyar Ashraf, Helen Schmitt

**2024-26 Research Assistants:** Michelle Martin, Dennis Brand, Jost Große Perdekamp, Anna Buzmakova

## Invited Talks

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**2024** NET-hUmAINE Winter School, 'On the Trustworthiness of LLMs'

## Skills & Interests

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**Programming** Python (Pandas, PyTorch, NumPy, Sklearn, Transformers), C#, C/C++, HTML/CSS, Java, Flutter, React.

**Languages** German (native), English (Cambridge English C2), French (DEL F B2).

**References available upon request.**