ANTONIA SCHLIEDER

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EDUCATION

PhD Candidate in Computer Science, Heidelberg University **4/2024 – now**
Advisor: Filip Sadlo
Thesis: Adapting Visualization for Visual Reasoning

M.Sc. in Data and Computer Science, Heidelberg University **4/2022 – 3/2024**
Advisor: Filip Sadlo
Thesis: Gaze-Based Recommendation of Visualization Exploration Paths
Focus: visual computing, application area: psychology

Erasmus Stay, University of Copenhagen **Summer term 2023**
Courses: human-computer interaction, user interface design, algorithmic geometry

B.Sc. in Computer Science, Heidelberg University **10/2017 – 2/2022**
Advisor: Filip Sadlo
Thesis: On the Design Space of Emotion-Based Facial Glyphs
Focus: computer graphics and visualization, application area: psychology

Erasmus Stay, Charles University, Prague **Winter term 2019/20**
Courses: computer graphics, computer linguistics, probability theory

WORK EXPERIENCE

Research Assistant, Heidelberg University **4/2024 – now**
Visual Computing Group, Filip Sadlo

- Interdisciplinary research on adaptive visualization with collaborators in psychology (Prof. Jan Rummel), education (Prof. Dörthe Herbrechter), and mathematics (Prof. Peter Albers)
- Design and implementation of eye tracking and large-scale online experiments

Research Consultant for Conversational AI, WisdomBridge GmbH, Bonn **12/2025 – now**

- Designed a conversational quality framework for AI-avatar-led interviews to define monitoring agent roles within the underlying multi-agent system

Student Assistant, Heidelberg University **10/2022 – 12/2023**
Visual Computing Group, Filip Sadlo

- Set up the eye tracking lab; developed interactive visualization software and analysis functions; implemented and conducted experimental studies

Student Assistant, Heidelberg University **10/2020 – 10/2022**
Visualization and Numerical Geometry Group, Susanne Krömker

- 3D scanning and processing of collected 3D data

Working Student, Quality Match GmbH, Heidelberg **12/2020 – 11/2023**

- Full-stack development, UI/UX design, and data visualization

SELECTED PUBLICATIONS

Enriching Dimensionality Reduction with Distortion Cues
W. Hassan, A. Schlieder, F. Sadlo, L. G. Nonato
Computers & Graphics (Presented at SIBGRAPI). 2026.

Visual Cues for Logical Reasoning about Text Enhance Metacognitive Sensitivity
A. Schlieder, J. Rummel, F. Sadlo
Computer Graphics Forum (Proceedings of EuroVis). 2026.

Human–Computer Metacognition: Visualizing LLM Reasoning to Support Independent Confidence Judgments
A. Schlieder, J. Rummel, F. Sadlo
CHI 2026 Workshop on Data Literacy. 2026.

Proportional Aggregation in Hierarchical Data Visualization
A. Schlieder, J. Rummel, F. Sadlo
IEEE Transactions on Visualization and Computer Graphics. 2026.

Sequential Visual Cues from Gaze Patterns: Reasoning Assistance for Bar Charts
A. Schlieder, J. Rummel, P. Albers, F. Sadlo
Proceedings of the CHI Conference on Human Factors in Computing Systems. 2025.

The Role of Metacognition in Understanding Deceptive Bar Charts
A. Schlieder, J. Rummel, P. Albers, F. Sadlo
IEEE Evaluation and Beyond–Methodological Approaches for Visualization Workshop. 2024.

Face-Based Glyphs Revisited
A. Schlieder, P. Wimmer, F. Sadlo
Short Paper Proceedings of EuroVis. 2022.

AWARDS & FUNDING

Young Marsilius Fellowship (5000 €, one-year fellowship) **2026/27**
One of 13 fellows (postdocs and advanced PhD) selected across all disciplines at Heidelberg University

IWR Collaborate! (6000 €, funding for one student assistant for 6 months), Co-PI **2026**
Topic: From Pixels to Cognition–How Image Features Relate to Eye Movements

Field of Focus 4 Early Career GET STARTED Project (5000 €), PI **2025**
Topic: Metacognitive Processes in Reasoning with Deceptive Visualizations

Marsilius Academy "AI and Human Values" Best Poster **2025**
Topic: LLM-Based Cues for Reasoning: Ethical Implications of Cognitive Offloading

SERVICE & ACTIVITIES

Reviewer: CHI 2026, 2027, IEEE VIS 2026, ACM TOCHI, IEEE TVCG

Co-organizer and moderator **11/2026**
VIS panel: "Friction in Visualization: When Should We Slow People Down?"

Participant **11/2026**
PhD Winter School on Theory in Human-Computer Interaction, Copenhagen, Denmark

Invited participant **12/2025**
Dagstuhl Seminar "From Psychology Enabled Visualization to Visualization Enabled Psychology"

Participant **9/2025**
Marsilius Academy "AI and Human Values", Heidelberg, Germany

TEACHING

Computer Graphics lecture, Teaching Assistant **Summer term 2024, 2026**
Instructor: Filip Sadlo

Marsilius Seminar: Augmenting Learners' Cognition, Instructor **Summer term 2026**
Co-instructors: Dörthe Herbrechter, Jan Rummel, Filip Sadlo

Visual Computing seminar, Teaching Assistant **Summer term 2024, 2025, 2026**
Instructor: Filip Sadlo

Scientific Visualization lecture, Teaching Assistant **Summer term 2025**
Instructor: Filip Sadlo

Visualization, Cognition and HCI seminar, Instructor **Winter term 2024/25**
Co-instructor: Filip Sadlo

MENTORING

2026

- **Irina Kullmann, Bachelor's thesis**
  Topic: Gaze-Driven Distortion Cues for Dimensionality Reduction (ongoing)
- **Mariam Elmaadawy, Selenay Kandemir, research project**
  Topic: Validation Framework for Eye Tracking Accuracy Using Point Spread Functions
- **Moritz Nazari, Ludwig Weidner, research project**
  Topic: Bridging VLMs and Chemical Databases for Interactive 3D Molecule Exploration

2025

- **Rahul Sharma, Master's thesis**
  Topic: Gentle Visual Cues for Tuning Attention with Live EEG
- **Ioana Todosi, Bachelor's thesis**
  Topic: Moiré-Based Force And Touch Sensing for Tangible User Interfaces
- **Paul Brinkmann, Markus Everling & Jan Kränzke, research project**
  Topic: Parsing and Visualization of District Heating Data for Smart Metering

2024

- **Abhinand Poosarala, Master's thesis**
  Topic: A Machine-Learning and NLP Approach to User Attention Modeling in Text Reading
- **Carlotta Jacobi, Bachelor's thesis as 2nd supervisor and reviewer**
  Topic: Lernprozesse bei Datenvisualisierungen: Die Rolle von Intelligenz und Numeracy
- **Nina Bisheh, Bachelor's thesis**
  Topic: Self-Similarity-Based Image Aesthetic Quantification
- **Denise Becker, Bachelor's thesis**
  Topic: Visualization of Dimensionality Reduction to Minimize Loss of Information
- **Robin Hoffmann, Bachelor's thesis**
  Topic: ScatterStars: A New Approach to Visualize Mulitdimensional Data

OUTREACH

Türen auf mit der Maus im CNSR, 3.10.2024, 3.10.2025, 3.10.2026
Hands-on introduction to eye tracking for an open day for children and their parents at the CNSR with a variety of stations on neurophysiological research.

SKILLS

Programming languages: Python, R, JavaScript (React.js, D3.js)

Languages: German (native), English (C2), French (B1)