# Robin Connor Schramm

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## Research Interests

My overarching goal is to enable meaningful interaction, visualization, and information dissemination, particularly through novel multimodal interfaces and technologies. Providing contextual information about users' environments interactively is a promising direction for Human-Computer Interaction (HCI), especially with the power of contextual AI. My multidisciplinary research in HCI is deeply rooted in experimental methods. A significant portion of my work involves conducting in-car field studies to evaluate innovative interaction paradigms and visualizations using empirical evidence. These studies are crucial as they offer real-world insights and data, ensuring that the developed systems are effective and practical in actual conditions beyond the lab. My current work primarily involves designing, implementing, and testing novel interactive systems that have the potential to shape future mobility.

## Education

**RheinMain University & Mercedes-Benz Tech Innovation** *Dec. 2022 - present*
*PhD in Human Computer Interaction*

**Advisor:** Prof. Dr. Ulrich Schwanecke
**Thesis Title:** Interactive Points of Interest for In-Car Augmented Reality

**Reutlingen University** *Sep. 2019 - Sep. 2021*
*Master of Science in Human-Centered Computing*

**Thesis Title:** Simulation of Long-Term SLAM for Mobile Robots
**Thesis Cooperation:** Fraunhofer IPA
**Overall Grade:** 1.3 - A equivalent

**Reutlingen University** *Mar. 2016 - Aug. 2019*
*Bachelor of Science in Computer Science and Media*

**Thesis Title:** Comparison of Motion Tracking and Inverse Kinematics for Presence in Virtual Reality
**Thesis Cooperation:** Fraunhofer IAO

## Job Experience

**Software Engineer** *October 2021 - present*
*Mercedes-Benz Tech Innovation* *Böblingen, Germany*

I develop prototypes in fast-changing environments with evolving hardware requirements. Specializing in creating in-car Augmented Reality applications using Unity, I focus on developing novel interactive systems that enhance user experience. My work also includes thorough testing in labs, in the field, and through empirical studies. Additionally, I create showcases and demos to demonstrate the capabilities of these systems. Collaborating with a team that drives and communicates innovation and immersive technologies across the company, I deliver efficient and client-focused solutions, ensuring smooth integration and optimal functionality within our advanced mobility systems.

**Research Assistant** *Feb. 2021 - Sep. 2021*
*Fraunhofer IPA* *Stuttgart, Germany*

I developed a virtual twin-like simulation for visual SLAM for mobile robots using Unity. This involved creating realistic simulations to test and refine visual SLAM algorithms, ensuring they perform effectively in dynamic and changing environments.

**Research Assistant** *Mar. 2020 - Feb. 2021*
*Reutlingen Research Institute* *Reutlingen, Germany*

In the Project KI Delta Learning, I developed Unity simulations using photogrammetry data and applied computer vision techniques to generate synthetic data for autonomous driving.

**Research Assistant** *Aug. 2019 - Feb. 2020*
*Fraunhofer IAO* *Stuttgart, Germany*

I developed innovative tools for collaborative Virtual Reality applications, specifically tailored for construction data visualization and analysis.

**Working Student** *Feb. 2018 - Jan. 2019*
*Bizerba* *Balingen, Germany*

I Developed User Interfaces for embedded systems and created new Linux build pipelines for long-term support systems.

## Teaching

**Lecturer - Scientific Writing** *October 2023 – present*
*Reutlingen University* *Reutlingen, Germany*

As a Lecturer for the seminar "Topics in Computer Science" I guide students through the basics of the scientific process, citation practices, systematic literature reviews, and academic writing. I provide detailed feedback on their papers and teach the essentials of delivering research talks and using AI tools. I have reviewed and graded papers and talks of over 150 students over the course of five semesters.

**Tutor - Basics in Programming** *Mar 2019 – Feb.2021*
*Reutlingen University* *Reutlingen, Germany*

Led the Programming Fundamentals Lab, where I taught students the basics of programming in C and Python through interactive live coding sessions, comprehensive reviews, and engaging Q&A discussions. Additionally, I reviewed exam questions and assisted in grading coding exams.

## Publications

1. **Robin Connor Schramm**, Ginevra Fedrizzi, Markus Sasalovici, Jann Philipp Freiwald, and Ulrich Schwanecke. 2025. *Augmented Journeys Interactive Points of Interest for In-Car Augmented Reality.* In CHI Conference on Human Factors in Computing Systems (CHI '25), ACM, doi: 10.1145/3706598.3714323
   Received a **CHI Honorable Mention Award for Best Paper** (top 5%)

2. **Robin Connor Schramm**, Markus Sasalovici, Jann Philipp Freiwald, Michael Otto, Melissa Reinelt, and Ulrich Schwanecke. 2025. *Blending the Worlds World-Fixed Visual Appearances in Automotive Augmented Reality.* In CHI Conference on Human Factors in Computing Systems (CHI '25), ACM, doi: 10.1145/3706598.3713185

3. Markus Sasalovici, Albin Zeqiri, **Robin Connor Schramm**, Oscar Javier Ariza Nunez, Pascal Jansen, Jann Philipp Freiwald, Mark Colley, Christian Winkler, and Enrico Rukzio. 2025. *Bumpy Ride? Understanding the Effects of External Forces on Spatial Interactions in Moving Vehicles.* In CHI Conference on Human Factors in Computing Systems (CHI '25), ACM, doi: 10.1145/3706598.3714077

4. **Robin Connor Schramm**, Markus Sasalovici, Axel Hildebrand, and Ulrich Schwanecke. 2023. *Assessing Augmented Reality Selection Techniques for Passengers in Moving Vehicles A Real-World User Study.* In ACM International Conference on Automotive User Interfaces and Interactive Vehicular Applications (AutomotiveUI '23), ACM, doi: 10.1145/3580585.3607152

5. Markus Sasalovici, Stephan Leenders, **Robin Connor Schramm**, Jann Philipp Freiwald, Hannes Frederic Botzet, Daniel Keßelheim, Thomas Krach, and Christian Winkler. 2023. *In-Car Office: Can HMD-Based AR Alleviate Passenger Motion Sickness?.* In 15th International Conference on Automotive User Interfaces and Interactive Vehicular Applications (AutomotiveUI '23 Adjunct), ACM, doi: 10.1145/3581961.3609869

## Service and Volunteering

- Part of the Organizing Committee as Proceedings Chair for MUM'26
- Peer Reviewing at HCI venues such as CHI, AutomotiveUI, ACM ISS, and the International Journal of Human-Computer Studies
- Student Volunteer at IEEEVR '21

## Thesis Supervision

**Master Theses** as main supervisor (all at Mercedes-Benz Tech Innovation):

- Leo Kruse, University of Porto (2025)
- Alireza Parchami, Saarland University (2025)
- Hongcheng Jia, University of Stuttgart (2024)
- Ginevra Fedrizzi, University of Trento (2024)

## Talks, Seminars, and Demos

- Ulm University (2025): "In-Car Mixed Reality - current research and challenges" - invited talk at the Automotive User Interfaces Lecture
- Mercedes-Benz Tech Innovation (2025): "Success Story - Research in Automotive User Interfaces" - in-person presentation at the company townhall meeting
- Mercedes-Benz PhDs poster session Doktoranden Marktplatz (2024) - in person
- WeAreDevelopers World Congress - Mercedes-Benz booth (2023): "In-Car Augmented Reality with the Varjo XR-3" - in-person interactive live demonstration
- Reutlingen University (2023): "Automotive User Interfaces in HCI" - in person
- Mercedes-Benz AG (2023): "Augmented Reality Selection Techniques in Moving Vehicles" - digital research cluster talk
- Mercedes-Benz Tech Motion (2022): "Integration of Head-Mounted Displays (HMDs) in Cars" - in-person tech talk

## Skills

- **Coding:** Mainly *C#* for prototyping and creating user studies, especially with Unity; *R* for analysis and visualization; proficient in *C*, *Python*, and *Java*
- **Industry Projects:** Proficient in working in teams with agile frameworks like Scrum and managing tasks with Kanban boards and Jira; regularly use and maintain *GitHub* repositories
- **Research:** Planning and conducting *user studies*, especially in the field; *Systematic Literature Review* for comprehensive analysis and synthesis of existing research; analyzing and interpreting both *qualitative* and *quantitative data*
- **Languages:** *German* - native; *English* - proficient