Dr. DI Clemens Schartmüller

Curriculum Vitae

Personal Data

Birthday	**15. December 1993**
Birthplace	**Linz, Austria**
Citizenship	**Austria**

Languages

German	Mother's tongue
English	Professional proficiency
Latin	Basic proficiency

Research Interests

Research Areas	I am interested in human-computer interaction that fosters efficiently usable interactive systems with a specific focus on advancing state-of-the-art user interfaces utilizing optimized haptic, visual, and auditory modalities for safety-critical application areas (such as productive office work in automated vehicles).
Research Methodology	I have significant experience in employing and evaluating objective performance and (driving) safety measures, as well as physiological measures (e.g., electrodermal activity or eye-tracking). In my research, I combine these with subjective feedback (self-ratings, interviews) and qualitative observations to comprehensively evaluate investigated hypotheses.

Professional Skills

Research	Safety-Critical HCI, Medium- and High-Fidelity Prototyping, User Study Design
Programming	Java (advanced), Android-API (advanced), C# (advanced), Python (good). Basic knowledge of: Assembly, C/C++, SQL, HTML, JavaScript, SQL, Bash, etc.
Further skills	Application of Psychophysiological Measures, Computer Vision, and Machine Learning; Computer Networks, Linux, and Consumer to "Prosumer" Hardware

Beyond the listed skills, I consider myself as an avid learner, eager to advance his skills depending on the requirements set.

Education

2018 – 2022/01	**Doctorate**, *Johannes Kepler University*, Linz, Austria Doctorate degree in Engineering Sciences (Focus: Computer Science), in cooperation with Technische Hochschule Ingolstadt, Germany. Graduation as Doctor technicae (equivalent to Ph.D.)
2015 – 2017	**Master's degree**, *Johannes Kepler University*, Linz, Austria Master's degree Computer Science, Focus *Pervasive Computing*, Graduation as Diplom-Ingenieur (equivalent to Master of Science)
2012 – 2015	**Bachelor's degree**, *Johannes Kepler University*, Linz, Austria Bachelor's degree Informatik (Computer Science), Graduation as Bachelor of Science
2009 – 2011	**Extraordinary student**, *Johannes Kepler University*, Linz, Austria Visit of single courses of the Bachelor's degree Informatik
2004 – 2012	**High school**, *Europagymnasium Auhof*, Linz, Austria Naturwissenschaftliches Realgymnasium Kepler, Focus Computer Science
2000 – 2004	**Grade school**, Pregarten, Austria

Professional Experience

2022/08 – ongoing	**Head of Software Development**, *sendance GmbH*, Linz, Austria Management of software development teams in production, front- and backend. Customer requirements elicitation and project management.
2022/03 – 2022/07	**Head of UX Development**, *Johannes Kepler University*, Linz, Austria User-centered development of the sendance-grid ecosystem. LIT Soft Materials Lab in cooperation with sendance GmbH.
2018 – 2021	**Researcher**, *Technische Hochschule Ingolstadt*, Ingolstadt, Germany PhD student researcher Automotive Human-Computer Interaction. Focus: "Mobile Office Conditionally Automated Vehicle"
2017 – 2021	**Teaching Assistant**, *Technische Hochschule Ingolstadt*, Ingolstadt, Germany Teaching of the programming practical courses "Praktikum Software Entwicklung". (Co-)Supervision of groups in the study design and execution of UX tests course "Studiendesign und Durchführung von UX Tests". Supervision of several projects, Bachelor, and Master theses in the User Experience Design, Computer Science, and Mechanical Engineering programs.
2016 – 2017	**Research Assistant**, *Technische Hochschule Ingolstadt*, Ingolstadt, Germany Research in the domain of Automotive Human-Computer Interaction, Development of a multi-tool prototyping and evaluation software framework
2013 – 2016	**Technical Assistant**, *Lawyer's Office Schartmüller & Pitner*, Pregarten, Austria Technical consulting, hard- and software support, translation assistance for English (from/to German)
2014	**Internship Android Developer**, *Runtastic GmbH*, Linz, Austria Android Development, Media Router Framework
2011	**Internship**, *technosert electronic GmbH*, Wartberg/Aist, Austria Diverse activities in warehouse, production and development.

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Academic Administrative Experience

2021 – 2022 **Web Co-Chair**, *CHIWORK – Symposium on HCI for Work*, Remote
Maintenance of the symposium's webpage: chiwork.org

2021 **Web Co-Chair**, *ACM Conference AutomotiveUI'21*, Remote
Maintenance of the conference's webpage: auto-ui.org/21

2021 **Local Co-Chair**, *ACM In-Cooperation Conference Mensch und Computer'21*, Ingolstadt, Germany
Organization of the conference's hybrid implementation and then (after a short-notice shift to remote-only) production and execution of the scientific sessions' livestream.

2019–2021 **Workshop Co-Organizer**, *ACM Conferences AutomotiveUI, CHI, and Dagstuhl Seminar 21232*, Worldwide
Co-Organization of the "AutoWork" workshop series at AutomotiveUI 2019, 2020, and 2021, the CHI 2020 Special Interest Group "Automated Cars as Living Rooms and Offices", and the full-day workshop "The Future of Work and Mobility in Automated Vehicles" at Dagstuhl Seminar 21232.

Honors and Awards

2022 **Doctoral programme Engineering Sciences Diploma with Distinction**, *Technisch-Naturwissenschaftliche Fakultät, Johannes Kepler University*, Linz, Austria

2021 **Best Demo Award**, *ACM In-Cooperation Conference Mensch und Computer 2021*, Ingolstadt, Germany

2018 **Honorable Mention Best Paper Award (Co-Author)**, *ACM Conference on Automotive User Interfaces and Interactive Vehicular Applications 2018*, Toronto, Canada

2018 **Best Work-In-Progress**, *ACM Conference on Automotive User Interfaces and Interactive Vehicular Applications 2018*, Toronto, Canada

2018 **IPG SimulOscar, 2nd Place**, *IPG Automotive GmbH awards for outstanding student projects*, Darmstadt, Germany

2017 **Computer Science Master's Diploma with Distinction**, *Technisch-Naturwissenschaftliche Fakultät, Johannes Kepler University*, Linz, Austria

2015 **Merit scholarship 2014/15 and 2015/16**, *Technisch-Naturwissenschaftliche Fakultät, Johannes Kepler University*, Linz, Austria

2012 **Matura with distinction**, *Europagymnasium Auhof*, Linz, Austria
(Matura is the Austrian equivalent to the German Abitur or English A-Levels)
Disciplines: Mathematics, English, Focus Computer Science
Specialized paper: "Mobile Dataprocessing. Conception and Implementation of an Application with SQLite Database for the mobile operating system Android" (title translated from German)
Special Topic in Computer Science: „Android Lifecycle"

2011 **Entrepreneur's Skills Certificate**, *WIFI Oberösterreich*, Linz, Austria
Passed with distinction.

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First Author Publications

[1] C. Schartmüller and A. Riener, "Multimodal error correction for speech-to-text in a mobile office automated vehicle: Results from a remote study," in *27th International Conference on Intelligent User Interfaces*, ser. IUI '22. New York, NY, USA: Association for Computing Machinery, 2022, p. 496–505. [Online]. Available: https://doi.org/10.1145/3490099.3511131

[2] C. Schartmüller and A. Riener, "The Driving Experience Lab: Simulating the Automotive Future in a Trailer," in *13th International Conference on Automotive User Interfaces and Interactive Vehicular Applications*, ser. AutomotiveUI '21 Adjunct. New York, NY, USA: Association for Computing Machinery, Sep. 2021, pp. 225–228. [Online]. Available: https://doi.org/10.1145/3473682.3481877

[3] C. Schartmüller, A. Riener, C. Pfeilschifter, and F. Hegner, "The (Mobile) Driving Experience Lab: Bridging Research and Knowledge Transfer to the General Public," in *Mensch Und Computer 2021*. Ingolstadt, Germany: Association for Computing Machinery, pp. 582–585.

[4] C. Schartmüller, K. Weigl, A. Löcken, P. Wintersberger, M. Steinhauser, and A. Riener, "Displays for Productive Non-Driving Related Tasks: Visual Behavior and Its Impact in Conditionally Automated Driving," *Multimodal Technologies and Interaction*, vol. 5, no. 4, 2021.

[5] C. Schartmüller and A. Riener, "Sick of Scents : Investigating Non-invasive Olfactory Motion Sickness Mitigation in Automated Driving," in *12th International Conference on Automotive User Interfaces and Interactive Vehicular Applications (AutomotiveUI '20), September 21– 22, 2020*. Virtual Event, DC, USA: ACM, New York, NY, USA, 2020, p. 10.

[6] C. Schartmüller, P. Wintersberger, A. Riener, A. L. Kun, S. Brewster, and O. Shaer, "Autowork 2020: Second Workshop on the Future of Work and Well-Being in Automated Vehicles," in *12th International Conference on Automotive User Interfaces and Interactive Vehicular Applications (AutomotiveUI '20 Adjunct)*. Virtual Event, USA: ACM, New York, NY, USA, 2020, p. 4.

[7] C. Schartmüller, S. Sarcar, A. Riener, A. L. Kun, O. Shaer, L. N. Boyle, and S. T. Iqbal, "Automated Cars as Living Rooms and Offices: Challenges and Opportunities," in *Adjunct Proceedings of the 2020 CHI Conference on Human Factors in Computing Systems - CHI '20*. Honolulu, HI, USA: ACM New York, NY, USA, 2020.

[8] C. Schartmüller, K. Weigl, P. Wintersberger, A. Riener, and M. Steinhauser, "Text Comprehension: Heads-Up vs. Auditory Displays: Implications for a Productive Work Environment in SAE Level 3 Automated Vehicles," in *Proceedings of the 11th International Conference on Automotive User Interfaces and Interactive Vehicular Applications*, ser. AutomotiveUI '19. New York, NY, USA: ACM, 2019, pp. 342–354.

[9] C. Schartmüller, A. Riener, and P. Wintersberger, "Steer-By-WiFi: Lateral Vehicle Control for Take-Overs with Nomadic Devices," in *Adjunct Proceedings of the 10th International Conference on Automotive User Interfaces and Interactive Vehicular Applications, AutomotiveUI 2018, Toronto, ON, Canada, September 23-25, 2018*, 2018, pp. 121–126.

[10] C. Schartmüller, A. Riener, P. Wintersberger, and A.-K. Frison, "Workaholistic : On Balancing Typing- and Handover-Performance in Automated Driving," in *Proceedings of the 20th International Conference on Human-Computer Interaction with Mobile Devices and Services, MobileHCI'18.* Barcelona, Spain: ACM, 2018, pp. 16:1—-16:12.

[11] C. Schartmüller and A. Riener, "Safe, Productive and Socially Accepted Text Input in Highly Automated Driving," in *MobileHCI 2018 Workshop on Socio-Technical Aspects of Text Entry.* Barcelona, Spain: ceur-ws, 2018, pp. 18–23. [Online]. Available: http://ceur-ws.org/Vol-2183/position3.pdf

[12] C. Schartmüller, P. Wintersberger, and A. Riener, "Interactive Demo: Rapid, Live Data Supported Prototyping with U.S.E." in *Adjunct Proceedings of the 9th International Conference on Automotive User Interfaces and Interactive Vehicular Applications.* Oldenburg: ACM, 2017, pp. 239–241.

[13] C. Schartmüller and A. Riener, "Field studies to investigate safety distance violation with a low-cost observation system," in *Adjunct Proceedings of the 7th International Conference on Automotive User Interfaces and Interactive Vehicular Applications*, ser. AutomotiveUI '15. New York, NY, USA: ACM, 2015, pp. 106–111.

Further Publications

Google Scholar   scholar.google.com/citations?user=clemens.schartmueller
ResearchGate   researchgate.net/profile/Clemens-Schartmueller/research

Technical Projects

2018–2021   **Realization of the (Mobile) Driving Experience Lab**, *Technische Hochschule Ingolstadt*, Ingolstadt, Germany
Conceptualization, organization, and implementation of a fully-equipped driving simulator lab for automotive HCI research and knowledge transfer in a trailer.
More: clemens.schartmueller.info/best-demo-award-the-driving-experience-lab

2017–2020   **Modernization of the Hexapod Driving Simulator CRUSADER**, *Technische Hochschule Ingolstadt*, Ingolstadt, Germany
Conceptualization, organization, and implementation of realtime hard- and software for the movement platform. Modernization of the driving simulation, the lab's measurement and prototyping equipment, and safety-concepts.
More: thi.de/en/research/carissma/laboratories/driving-simulator-hexapod

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2017–2021 **The USE Software Framework**, *Technische Hochschule Ingolstadt*, Ingolstadt, Germany

Conceptualization, organization, and implementation of a middle-ware software to interconnect and synchronize lab equipment and prototypes for repeatable high-fidelity user studies.
More: doi.org/10.1145/3131726.3132046

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