Pascal Jansen

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RESEARCH INTERESTS

My multidisciplinary research focuses on Ubiquitous Personalization, which combines Human-Computer Interaction (HCI), Computational Methods, and Inclusive Design to create a future where technology in everyday environments is personalized seamlessly to each individual's states, preferences, and needs. A key challenge lies in developing systems that effectively respond to diverse user abilities and hardly predictable use contexts. By advancing computational user interface optimization, user interaction simulation and analysis, and inclusive design methods, I make technology more intuitive, adaptive, and accessible for all.

EDUCATION

Ulm University, Ulm, Germany   06/2021 — present
Doctor of Science (PhD) Candidate in Human-Computer Interaction
Thesis Title: *A Framework for Computational User-Centered Optimization of Human-Vehicle Interaction Design*
Advisor: Prof. Dr. Enrico Rukzio
Committee: Prof. Dr. Antti Oulasvirta (Aalto University, Finland), Prof. Dr. Philipp Wintersberger (IT:U Linz, Austria)
Planned Defense: 12/2025

University College London, London, UK   01/2025 — 03/2025
Visiting Research Scholar with Prof. Dr. Mark Colley

Ulm University, Ulm, Germany   04/2018 — 05/2021
Master of Science in Computer Science   Overall Grade: 1.1, with Distinction - A-equivalent
Thesis Title: *SwiVR-Car-Seat: Utilizing a Motorized Swivel Seat to Explore Effects of Vehicle Motion on Interaction Quality in Virtual Reality Automated Driving*   Grade: 1.0 - A-equivalent

Ulm University, Ulm, Germany   10/2014 — 03/2018
Bachelor of Science: Computer Science
Specialized Subject Area: Biology

JOB EXPERIENCE

Ulm University   Ulm, Germany
Research Associate   06/2021 — present
I significantly contribute to research and teaching. Also, I played a key role in co-leading and implementing the externally funded project *SituWare*. Furthermore, I successfully championed novel topics related to immersive data visualization and computational methods into the department's research scope. My work incorporates numerous research approaches such as experiments, interviews, focus groups, literature reviews, observation, usability testing, & dataset creation. It has led to over **15 peer-reviewed full papers**.

Zefwih GbR   Neu-Ulm, Germany
CEO & Co-Founder   01/2022 — present
At Zefwih, I lead business strategy while contributing to developing desktop, mobile, and virtual reality user-centered applications for commercial, culture, and research scopes. I also consult on early-stage digitalization projects, leveraging iterative design processes and HCI principles to encourage sustainable innovation. This experience refined my skills in HCI research from an industrial perspective, interaction design consultation, and project collaboration.

Ulm University   Ulm, Germany
Student Research Assistant, Institute of Media Informatics   06/2019 — 02/2021
I contributed to the ideation and development of a multi-user shared content augmented reality platform and eye-tracking applications for virtual reality. This involved literature research, designing studies, and contributing to multiple publications. I also supported multiple lectures and exercises, tutored students during course projects, and evaluated their coursework.

Ulm University   Ulm, Germany
Student Research Assistant, Institute of Communications Engineering   12/2018 — 03/2019
I led the ideation and development of voice-assistance applications in dialogue systems engineering, conducted literature research, and supported publication work. Additionally, I actively participated in internal review processes.

GRANTS, ACADEMIC and INDUSTRIAL SUPPORT

- *Startup Your Career* support (10.000€) by the Graduate & Professional Training Center at Ulm University
- Supported by the Mobility Program of Ulm University (2.800€)
- Supported by the German Federal Ministry of Transport and Digital Infrastructure (25.000€)

SERVICE and VOLUNTEERING ACTIVITIES

- Associate Chair / Program Committee Member:
  - Full Paper - AutomotiveUI '24'25, MuC '24'25, CHIWORK'25

    − Late-Breaking Works (LBW) - CHI '23'24'25

- **Organizing Committee**: AutoUI 2023 (Registration Chair)
- Peer Reviewing: **Over 150 peer-reviews completed** so far for AutomotiveUI, VRST, **CHI**, IDC, ICWSM, GLS, MobileHCI, IMX, ETRA, COGAIN, CogSci, DIS, EICS PACM, CHI Play, ISS, ISMAR, Creativity & Cognition, MuC, NordiCHI, ICIS, OzCHI, ISWC, IEEE VIS, ICMI, HAI, PacificVis, **CSCW**, **UIST**, TEI, **IMWUT**, **TVCG**, **TRF**, and BIT
- Student Volunteer: CHI 2023
- Co-Organizer of the Post-CHI Summer School On Automotive User Interfaces and Future Mobility
- Co-Organizer of the German Pre-CHI 2022 hosted in Ulm, Germany with more than 70 participants

TEACHING

Research Project in Human-Computer Interaction
Course Organizer: Co-organized an interdisciplinary project emphasizing user-centered design and design thinking, undertaken as a year-long, research-driven group effort culminating in several publications.   Fall 2021 — Spring 2025

User Interface Software Technologies
Course Organizer and Lecturer: Led the development of course materials and delivered a weekly (interactive) lecture on designing user interfaces and interaction technologies, emphasizing a user-centered design process. Starting from the basics of interactive systems, the course explored interface creation, different media, and formal methods—particularly HCI notations. I co-led the evaluation process by grading the final exam and ensuring a fair, thorough assessment of student performance.   Spring 2022 — Spring 2024

Automotive User Interfaces and Interactive Vehicle Applications
Course Organizer and Lecturer: Led the development of course materials and held a weekly (interactive) lecture on practical insights on developing and researching automotive user interfaces, teaching the user-centered design process. Delivered a yearly in-depth lecture on future mobility research and computational methods for automated vehicle user interface design. Co-led the evaluation process by grading the final exam and ensuring a fair and thorough assessment of student performance.   Fall 2021 — Fall 2024

Research Trends in Media Informatics
Course Organizer: Co-organized the course, mentored PhD students on course structure and content, and provided detailed one-on-one instruction to over 10 students in conducting literature surveys using the PRISMA method. Additionally, took an active role in assessing and grading students' work.   Fall 2021 — Fall 2024

THESIS SUPERVISION (Selection, Total>25)

Bachelor Theses
- Hermann Fröhlich (Ulm University and PlanB. GmbH; 2024)
- Nam Anh Le Cong (Ulm University; 2024)
- Julius Schürrle (Ulm University; 2023)
- Benno Hölz (Ulm University; 2023)
- Oliver Schmid (Ulm University; 2022)
- Christine Mayer (Ulm University; 2022)

Master Theses
- Julian Britten (Ulm University; 2025) **now PhD student at Ulm University**
- Sepide Ansari (Ulm University and Spiegel Institute Mannheim GmbH; 2025)
- Mugdha Keskar (Ulm University; 2024)
- Svenja Krauß (Ulm University; 2023)
- Alexander Häusele (Ulm University; 2023)
- Alexandra Nick (Ulm University and Cerence GmbH; 2023)

GUEST LECTURES

- University College London, UCL Interaction Centre (13.02.2025): "Ubiquitous Personalization"; *Future Interfaces* Course; in-person

AWARDS and NOMINATIONS

Outstanding Reviewer Recognition: IMWUT '22, ISS '22, AutomotiveUI '22'23, DIS '23, IEEE VIS '23, CHI '24 (x2), CHI '24 LBW, CSCW '24, MuC '24, UIST '24, IMWUT '24, and CHI '25
I have received 14 Outstanding Reviewer Awards, demonstrating my commitment to excellence in academic review processes. These recognitions reflect my deep understanding and critical thinking skills, which help advance scholarly discourse.

Honorable Mention Award at CHI '25 - DOI: 10.1145/3706598.3713514
This paper addressed the challenge of scalable automotive user interface design. We implemented *OptiCarVis*, a system integrating Human-in-the-Loop Bayesian Optimization. An online study (N=117) demonstrates OptiCarVis efficacy in significantly improving trust, acceptance, perceived safety, and predictability without increasing cognitive load.

Audience Choice Award at CHI PLAY '20 - DOI: 10.1145/3383668.3419917
As technical attacks become harder to execute, social engineering exploits the human factor of information security, often going undetected and causing high organizational costs. To address this, we presented "The Social Engineer", an immersive VR game designed to raise

awareness by letting players experience various social engineering methods in a simulated company environment. This extensible tool can serve as employee self-training, aid security experts in teaching awareness, and provide consumer engagement.

Moreover, the serious game "The Social Engineer" was nominated for the **Young Talent Award at German Computer Game Awards '21**. The same project was also a finalist for **Best Student Game Award at Games for Change Awards '22**, and it was subsequently nominated for **nextReality.Contest '22 in the "Young Talent" category**.

SKILLS

- **Research:** Proficient in **quantitative analysis** using R (parametric/non-parametric data, linear regression, hierarchical models) and **qualitative analysis** following Saldaña's guidelines
- **Coding:** R (data analysis, visualization, web scraping), Python (computational modeling), Java, and C# (particularly with **Unity**)
- **Fabrication & Engineering:** Experienced in 3D printing, electrical engineering, and microcontroller programming (Arduino, Raspberry Pi)
- **Sensing Technologies:** Adept at using physiological sensors (eye-tracking on desktop/head-mounted display, wearable sensors for heart rate and skin conductance), motion tracking (computer vision using RGB camera input and infrared-based body/hand tracking), and vehicle telemetry (interior/exterior cameras, OBD) for data analysis and interactive, as well as adaptive systems
- **Open Science:** Proficient in open science practices, transparency, reproducibility and accessibility; experienced in sharing data (example) via open-access platforms, using open-source tools, and contributing to community projects
- **Languages:** German (native), English (proficient), French (intermediate).

MAJOR PUBLICATIONS (CHI, IMWUT, UIST, TOCHI)

ACM CHI/IMWUT/UIST/TOCHI are widely recognized as the premier venues for publishing research in the field of HCI. They are highly competitive, with acceptance rates typically ranging between 20-25%.

CHI

1. **P. Jansen***, M. Colley*, S. Krauß, D. Hirschle, & E. Rukzio, OptCarVis: Improving Automated Vehicle Functionality Visualizations Using Bayesian Optimization to Enhance User Experience
   In Proc. of CHI 2025, ACM, doi: 10.1145/3706598.3713514, *Joint First Authors
   CHI Honorable Mention Award for Best Paper (top 5%)
2. M. Colley*, **P. Jansen***, M. Keskar, & E. Rukzio, Improving External Communication of Automated Vehicles Using Bayesian Optimization
   In Proc. of CHI 2025, ACM, doi: 10.1145/3706598.3714187, *Joint First Authors
3. M. Sasalovici, A. Zeqiri, R. C. Schramm, O. J. A. Nuñez, **P. Jansen**, J.P. Freiwald, M. Colley, C. Winkler, & E. Rukzio, Bumpy Ride? Understanding the Effects of External Forces on Spatial Interactions in Moving Vehicles
   In Proc. of CHI 2025, ACM, doi: 10.1145/3706598.371407
4. L. Meinhardt, C. Schramm, **P. Jansen**, M. Colley, & E. Rukzio, Fly Away: Evaluating the Impact of Motion Fidelity on Optimized User Interface Design via Bayesian Optimization in Automated Urban Air Mobility Simulations
   In Proc. of CHI 2025, ACM, doi: 10.1145/3706598.3713288
5. A. Zeqiri, J. Britten, C. Schramm, **P. Jansen**, M. Rietzler, & E. Rukzio, PlantPal: Leveraging Precision Agriculture Robots to Facilitate Remote Engagement in Urban Gardening
   In Proc. of CHI 2025, ACM, doi: 10.1145/3706598.3713180
6. M. Colley, B. Wanner, M. Rädler, M. Rötzer, J. Frommel, T. Hirzle, **P. Jansen**, & E. Rukzio, Effects of a Gaze-Based 2D Platform Game on User Enjoyment, Perceived Competence, & Digital Eye Strain
   In Proc. of CHI 2024, ACM, doi: 10.1145/3613904.3641909
7. **P. Jansen**, J. Britten, A. Häusele, T. Segschneider, M. Colley, & E. Rukzio, AutoVis: Enabling Mixed-Immersive Analysis of Automotive User Interface Interaction Studies
   In Proc. of CHI 2023, ACM, doi: 10.1145/3544548.3580760, [Website Link]

IMWUT

1. A. Zeqiri, **P. Jansen**, J. Rixen, M. Rietzler, and E. Rukzio, 'Eco Is Just Marketing': Unraveling Everyday Barriers to the Adoption of Energy-Saving Features in Major Home Appliances
   In Proc. IMWUT 2024, ACM, doi: 10.1145/3643558
2. **P. Jansen**, M. Colley, & E. Rukzio, A Design Space for Human Sensor and Actuator Focused In-Vehicle Interaction Based on a Systematic Literature Review
   In Proc. IMWUT 2022, ACM, doi: 10.1145/3534617
3. M. Colley, **P. Jansen**, E. Rukzio and J. Gugenheimer, SwiVR-Car-Seat: Exploring Vehicle Motion Effects on Interaction Quality in Virtual Reality Automated Driving Using a Motorized Swivel Seat
   In Proc. IMWUT 2021, ACM, doi: 10.1145/3494968

UIST

- **P. Jansen**, F. Fischbach, J. Gugenheimer, E. Stemasov, J. Frommel, and E. Rukzio, ShARe: Enabling Co-Located Asymmetric Multi-User Interaction for Augmented Reality Head-Mounted Displays
   In Proc. UIST 2020, ACM, doi: 10.1145/3379337.3415843

TOCHI

- T. Hirzle, F. Fischbach, J. Karlbauer, **P. Jansen**, J. Gugenheimer, E. Rukzio, and A. Bulling, Understanding, Addressing, and Analysing Digital Eye Strain in Virtual Reality Head-Mounted Displays
   In ACM Transactions on Computer-Human Interaction (TOCHI) 2022, ACM, doi: 10.1145/3492802

FURTHER PUBLICATIONS

Journal Paper
Transportation Research Part F, with an impact factor of 4.60 (2022) is considered to be top-tier journals in traffic psychology.

1. **P. Jansen***, M. Colley*, T. Pfeifer, & E. Rukzio, Visualizing Imperfect Situation Detection and Prediction in Automated Vehicles: Understanding Users
   In Transportation Research Part F: Traffic Psychology and Behaviour 2024, Elsevier, *Joint First Authors, doi: 10.1016/j.trf.2024.05.015
2. **P. Jansen***, M. Colley*, Max Rädler*, Jonas Schwedler, & E. Rukzio, Longitudinal effects of visualizing uncertainty of situation detection and prediction of automated vehicles on user perceptions
   In Transportation Research Part F: Traffic Psychology and Behaviour 2024, Elsevier, *Joint First Authors, doi: 10.1016/j.trf.2025.05.013

Conference Full Paper

1. T. Drey, F. Fischbach, **P. Jansen**, J. Frommel, M. Rietzler, and E. Rukzio, To Be or Not to Be Stuck, or Is It a Continuum?: A Systematic Literature Review on the Concept of Being Stuck in Games
   In Proc. CHI PLAY 2021, ACM, doi: [10.1145/3474656](10.1145/3474656)
2. M. Kraus, F. Fischbach, **P. Jansen**, and W. Minker, A comparison of explicit and implicit proactive dialogue strategies for conversational recommendation
   In Proc. of the Twelfth Language Resources and Evaluation Conference (LREC) 2020, ACM, urn: urn:nbn:de:bvb:384-opus4-1013633

Conference Short Paper

1. M. Colley, J. Czymmeck, **P. Jansen**, L.-M. Meinhardt, P. Ebel, & E. Rukzio, UAM-SUMO: Simulacra of Urban Air Mobility Using SUMO To Study Large-Scale Effects
   In Proc. HRI 2025, ACM, doi: [10.5555/3721488.3721610](10.5555/3721488.3721610), GitHub Link
2. **P. Jansen***, M. Colley*, E. Wimmer, J. Maresch, & E. Rukzio, HUD-SUMO: Simulacra of In-Vehicle Head-Up Displays Using SUMO To Study Large-Scale Effects
   In Proc. HRI 2025, ACM, doi: [10.5555/3721488.3721614](10.5555/3721488.3721614), GitHub Link; * Joint First Authors
3. M. Colley, J. Czymmeck, M. Kücükkocak, **P. Jansen**, & E. Rukzio, PedSUMO: Simulacra of Automated Vehicle-Pedestrian Interaction Using SUMO To Study Large-Scale Effects
   In Proc. HRI 2024, ACM, doi: [10.1145/3610977.3637478](10.1145/3610977.3637478), GitHub Link
4. **P. Jansen** and F. Fischbach, The Social Engineer: An Immersive Virtual Reality Educational Game to Raise Social Engineering Awareness
   In Proc. CHI PLAY EA 2020, ACM, doi: [10.1145/3383668.3419917](10.1145/3383668.3419917)
   Audience Choice Award

Workshop

- M. Haimerl, **P. Jansen**, A. Riener, and M. Colley, Accessible Automated Automotive Workshop Series (A3WS): Focus Accessibility in Mobility
  In Proc. MuC EA 2025, Gesellschaft für Informatik e.V,

Extended Abstracts

- T. Drey, **P. Jansen**, F. Fischbach, J. Frommel, & Enrico Rukzio, Towards Progress Assessment for Adaptive Hints in Educational Virtual Reality Games
  In Proc. CHI EA 2020, ACM, doi: [10.1145/3334480.3382789](10.1145/3334480.3382789)

Demo

- **P. Jansen**, J. Britten, A. Häusele, T. Segschneider, M. Colley, & E. Rukzio, A Demonstration of AutoVis: Enabling Mixed-Immersive Analysis of Automotive User Interface Interaction Studies
  In Proc. AutoUI EA 2023, ACM, doi: [10.1145/3581961.3610374](10.1145/3581961.3610374)

Workshop Position Paper

- **P. Jansen**, Human-in-the-Loop Optimization for Inclusive Design: Balancing Automation and Designer Expertise, at the *CHI 2025 Workshop Access InContext: Futuring Accessible Prototyping Tools and Methods.* April 26, 2025. Yokohama, Japan, doi: 10.48550/arXiv.2505.08375