Hauke Sandhaus

HCI Researcher & UX Technologist

Hauke Sandhaus
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Currently

Cornell Tech University / Ph.D. Candidate in Information Science
STARTED AUGUST 2021, NYC, NY, USA

Advised by assistant professor Qian Yang and co-advised by associate professor Wendy Ju

Research Focus: Enabling technology designers to develop for positive societal impact while navigating external influences

Working on responsible and efficient design innovation methodologies to empower designers

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Skills

Coding: Python, Java, JavaScript, React.js, Node.js, Android, Unity3D, C#, Arduino, Open Frameworks

AI: fastai, Pinecone, Teachable Machines, TensorFlow, ml5.js, OpenCV, Sci-kit learn, DepthAI

Data Analytics: Python data visualization, Tableau, R, Matlab, d3.js

Design: Interface design, Lottie, AE, 3D modeling, PSD, Framer

User Research: Contextual & expert interviews, ethnography, surveys

UX: Personas, wireframes, focus groups, human factors

Hardware: CAD, Rapid prototyping, 3D manufacturing

Management: Team leadership, conflict resolution, strategy, scaled agile methods (certified), UX strategy

Professional Experience

Center for Responsible AI at NYU / Research Assistant
MARCH 2023 - DECEMBER 2023, BROOKLYN, NEW YORK, USA

Worked on the "University of Notre Dame - IBM" Technology Ethics Lab Grant Auditing AI Initiative on the project "Expanding AI Audits to Include Instruments: Accountability, Measurements, and Data in Motion Capture Technology."

Collaborated with researchers from University of Michigan, Intel Labs, and New York University on an award winning CHI publication.

Volkswagen Group Future Center / UX Technologist
OCTOBER 2018-AUGUST 2021, POTSDAM, BRANDENBURG, GERMANY

Led design of inclusive user experiences for fully autonomous vehicles, improving User Experience Questionnaire (UEQ) benchmarks by 30% over state-of-the-art

Developed and implemented a next-generation digital cockpit that improved accessibility of steering wheel functions without affecting driving performance

Created high-fidelity AI prototypes using cutting-edge research papers and custom computer vision pipelines that were adopted for production development

Designed and prototyped LLM-based digital assistant interfaces for in-vehicle use, now in final stages before market release

Established GDPR-compliant research practices that were adopted across the VW Group

Successfully transferred multiple vision projects to strategy teams, with implementations adopted by Porsche, Skoda, and Audi

Robert Bosch / Intern & External Master Theses
AUGUST 2017 -JANUARY 2018, PLYMOUTH, MICHIGAN USA

Designed Vehicle-to-Everything (V2X) interfaces

Conducted research on autonomous vehicle interfaces for older adults and people with disabilities

Conducted on-road studies for ambient in-cabin lighting systems that identified critical safety, comfort, and motion sickness factors for AV passengers

ELIXIER / Student Researcher
AUGUST 2016 - APRIL 2017, BAUHAUS UNIVERSITY WEIMAR, GERMANY

Conducted usability testing of multimodal & augmented workbenches for education

Developed an augmented reality manual for chemistry experiments

100%FAT / External Bachelor Theses
JANUARY 2015 - MAY 2015, ENSCHEDE, NETHERLANDS

Designed, developed, and evaluated a prototype for a touchless interactive showcase in the DesignLab Twente. The prototype was permanently

installed in the Design Hall.

Twente Academy / Student Teacher

MARCH 2014 - SEPTEMBER 2014, UNIVERSITEIT TWENTE, GERMANY

Teaching pupils from upper secondary school programming with the Arduino microprocessor.

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Education

Bauhaus Universität Weimar / Human Computer Interaction M.Sc.

2015 - 2018, WEIMAR, THURINGIA, GERMANY

HCI at the Bauhaus Universität Weimar consists out of compulsory courses from Computer Science for Digital Media, two major projects, and electives. Graduated with honors (GPA 3.9).

Universiteit Twente / Creative Technology B.Sc.

2011 - 2015, ENSCHEDE, OVERIJSSEL, NETHERLANDS

Creative Technology Courses combine several primarily independent fields of studies with subjects from Computer Science, Electrical Engineering, Industrial Design, Management, and Psychology. I graduated Cum Laude (Thesis GP 4.0).

Czech Technical University / Semester Abroad

2013 - 2014, PRAGUE, CZECH REPUBLIC

Courses from electrical engineering and telecommunications.

Gymnasium im Schloss / Abitur

2003 - 2011, WOLFENBÜTTEL, LOWER SAXONY, GERMANY

I was in the science branch (STEM) of the high school and participated and won in competitions. Graduated from high school with majors in Art & Religion.

Degree

Human-Computer Interaction M.Sc. / Master Thesis

Graduated with the best thesis of the year: Designing, Developing and Evaluating a prototype for a light communication interface for fully autonomous vehicles. Research on inclusive vehicle interfaces & methodologies to test fully autonomous vehicles.

Title: "An Ambient Display for Fully Autonomous Vehicles"

Publication: "A WOZ Study of Feedforward Information on an Ambient Display in Autonomous Cars." In The 31st Annual ACM Symposium on User Interface Software and Technology Adjunct Proceedings

Creative Technology B.Sc. / Bachelor Thesis

Represented my graduation year and gave the graduation speech for the bachelor thesis. Research on touchless interaction methods, usability testing through an interactive game with multiple self-created air gestures. Implementation of a full prototype. The touchless showcase is still visible in the design gallery of the University of Twente.

Title: "Development of a 3D Navigable Interface for a Touchless Showcase"

Publication: open-access

Service & Teaching

Teaching Assistant in Privacy in the Digital Age
Fall 2024
Head TA in master level privacy class. Led assignments, in-class privacy policy exercise and a lecture on usable privacy . With Helen Nissenbaum and Vitaly Shmatikov.

Teaching Assistant in Interactive Device Design
Fall 2023
Head TA in master level prototyping class. Maintained project code repository, labs and oversaw grading. With Wendy Ju.

ISGSA Liason
Fall 2022 - Fall 2023
Information Science Graduate Student Association Liason for NYC to Ithaca campus collaboration.

Teaching Assistant in HCI Design
Fall 2021
Assisted in teaching undergraduate and master level course in human computer interaction. Oversaw grading and individual sections. With Gilly Leshed.

We Drive Proud
2019 - 2021
Member of the VW network to advocate being out at work.

Fellowships & Awards

DLI Doctoral Fellow

Fall 2023 - Spring 2024

The Digital Life Initiative supports examining the complexities and tensions present in digital technologies involving ethics, policy, politics, and quality of life.

Siegel Public Interest Technology Impact Fellowship

March 2021

Funded to work for not-for profit organization YAI by the fellowship award. YAI is one of the largest organizations in the U.S. providing children and adults with intellectual and developmental disabilities (I/DD) a comprehensive range of services.

Thesis of the year

July 2015

Selected by jury to speak at graduation ceremony. Bachelor thesis presented on behalf of the creative technology program.

Ongoing Projects

Benevolent User Interface Design

Developing frameworks to counteract dark patterns with "bright patterns" that prioritize user goals and well-being over their desires and business objectives.
Created brightpatterns.org to catalog and promote benevolent design solutions by corporations, seemingly acting against their short-term best interest.
Created the survey tool UEEQ.org to quantify ethical user experience metrics to evaluate interface design.

Enabling Appropriate Dataflows

Investigating methods to promote data sharing and transparency.
Developing onboarding flows to encourage transparent data sharing that enables AI models for societal good.
Researching large scale dataset privacy risks on groups and developing frameworks to enable use of them through contextual integrity.

Responsible AI Innovation

Auditing AI hardware for historical bias in measurement standards.
Encouraging regulatory sandboxing in high-risk domains to enable innovation with appropriate guardrails.
Exploring how startups can prototype policy, business models, and technology simultaneously.

Modeling Human Driving Interaction

Understanding cross-cultural differences in driving behaviors using virtual reality environments.
Developing frameworks for autonomous vehicles with enhanced social capabilities.
Researching human-machine interaction patterns for mixed-autonomy traffic scenarios.

Publications

Latest publications and pre-prints at
haukesand.github.io/publications

- ❖ Sandhaus, H., Rhomberg, D., Yang, Q. (July 2025). Deceptive Performance Indicators: Using User Experience Questionnaires to Assess 'Good' Design Can Be Misleading. *DIS '25 Under Review*.

- ❖ Sandhaus, H., Gu, Q., Parreira, T., Ju, W. (July 2025). Co-Designing with Algorithms: Unpacking the Complex Role of GenAI in Interactive System Design Education. *DIS '25 Under Review*.

- ❖ Franchi, M.*, *Sandhaus, H.*, Choksi, M., Engelmann, S., Ju, W., Nissenbaum, H. (July 2025). Privacy of Groups in Dense Street Imagery. *FAccT 2025 Under Review*. * = equal contribution

- ❖ Sandhaus, H., Hwang, A., Yang, Q., & Ju, W. (July 2025). My Precious Crash Data: Barriers and Opportunities in Encouraging Autonomous Driving Companies to Share Safety-Critical Data. *CSCW '25 Proceedings*.

- ❖ Ebel, P., Bazilinskyy, P., Colley, M., Goodridge, C. M., Hock, P., Janssen, C. P., Sandhaus, H., Srinivasan, A. R., Wintersberger, P. (2024). Changing Lanes Toward Open Science: Openness and Transparency in Automotive User Research. *In Proceedings of the 16th International Conference on Automotive User Interfaces and Interactive Vehicular Applications*, Stanford, CA, USA.

- ❖ Sandhaus, H., Choksi, M. Z., Ju, W. (2024). Regaining Trust: Impact of Transparent User Interface Design on Acceptance of Camera-Based In-Car Health Monitoring Systems. *In Adjunct Proceedings of the 16th International Conference on Automotive User Interfaces and Interactive Vehicular Applications*, Stanford, CA, USA.

- ❖ Di Pirro, R., Sandhaus, H., Goedicke, D., Calderone, D., Oishi, M., Ju, W. (September 2024). Characterizing Cultural Differences in Naturalistic Driving Interactions. *IEEE International Conference on Intelligent Transportation Systems 2024*.

- ❖ Klein, N., Sandhaus, H., Goedicke, D., Parush, A., & Ju, W. (September 2024). Modeling Social Situation Awareness in Driving Interactions. *AutoUI '24 Proceedings*.

- ❖ Rhomberg, D.*, *Sandhaus, H*. (May 2024). Towards Quantifying Ethical User Experience: Evaluating User Perceptions of Dark Patterns in Social Media. *Mobilizing Research and Regulatory Action on Dark Patterns and Deceptive Design Practices Workshop at CHI*. * = equal contribution

- ❖ Harvey, E., Sandhaus, H., Jacobs, A.Z., Moss, E., & Sloane, M. (January 2024). The Cadaver in the Machine: The Social Practices of Measurement and Validation in Motion Capture Technology. *CHI '24 Proceedings*.

- ❖ Kim, J., Sandhaus, H., and Fussell, S. (2023). Job Interview Using a Gender-Swapped Avatar. *CSCW Companion*.

- ❖ Sandhaus, H. (2023). Promoting Bright Patterns. *CHI '23 Workshop: Designing Technology and Policy Simultaneously, arXiv [cs.HC]*.

- ❖ Sandhaus, H., Ju, W. and Yang, Q. (2023). Towards Prototyping Driverless Vehicle Behaviors, City Design, and Policies

Simultaneously. *CHI '23 Workshop: Designing Technology and Policy Simultaneously, arXiv [cs.HC].*

❖ Sandhaus, H. and Hornecker, E. (2018). A WOZ Study of Feedforward Information on an Ambient Display in Autonomous Cars. *The 31st Annual ACM Symposium on User Interface Software and Technology Adjunct Proceedings,* 90–92.

❖ Martinez, A., Honauer, M., Sandhaus, H. and Hornecker, E. (2018). Smart textiles in the performing arts. *Textiles, Identity and Innovation: Design the Future.* CRC Press, 311–318.

❖ Sandhaus, H. (2015). Development of a 3D navigable interface for a touchless showcase. *University of Twente.*

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Personal

Georg & Gabi Sandhaus/ Parents
Electrical Engineer & Civil Engineer. Detroit USA.

Tim Vischer / Husband
Lead of video content at Saks 5th Avenue, NYC.

Anna Zaddam & Merle Sandhaus / Sisters
Dental Technician & Math and English Teacher. Lower Saxony Germany

Hauke Sandhaus / Me
Born 6. May 1992 in Wolfenbüttel, Germany. Interested in electronic music & independent movies. Technophile, sporty & nature-loving.