Alexandra W.D. **Bremers**

Cornell Tech (NYC), Cornell University
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Ph.D. Candidate with 3+ years of full-time industrial R&D experience in the US and UK. Skilled designer, user researcher and developer of technical systems. Broadly trained accross UX and IxD domains, with additional expertise in designing for fabrication machines, robots and automotive interiors. My dissertation investigates physical machines as smart, interactive collaborators to support people during fabrication tasks.

EDUCATION

2020- (exp. 1/2026) **Ph.D. in Information Science**, Cornell University, New York, NY, USA
Dissertation: "Towards Designing Mixed-Initiative Machines for Creatives."
Committee: Dr. Wendy Ju (chair), Dr. Francois Guimbretiere, Dr. Steve Marschner (CS minor).

2020-2023 **M.S. in Information Science**, Cornell University, New York, NY, USA

2019 **Coursework in Automotive Human-Technology Interaction (5 M.Eng. credits)**, Warwick University, UK

2016-2018 **M.S. in Artificial Intelligence**, Utrecht University, The Netherlands
Thesis: "Perception of Perspective in Augmented Reality Windscreens."
Advisors: Dr. Chris Janssen, Valerian Meijering (Jaguar Land Rover).

2013-2016 **B.S. in Industrial Design**, Eindhoven University of Technology, The Netherlands
Graduation Project: "How to Embroider a Radio"

EMPLOYMENT HISTORY

2020– **Graduate Assistant**, Cornell University, New York, NY, USA

- Managed team research projects funded by Toyota, Accenture, Nissan, and the NSF towards publication
- Prototyped interactive systems (Arduino, Jetson Nano, Hololens, Unity, Python, Microsoft Psi)
- Qualitative research including brainstorming, interviews and field visits (Adobe CS, Figma, Miro, Atlas.ti)
- Designed and ran quantitative surveys (Qualtrics) and performed statistical analysis (R, Python)
- Mentored 5 undergraduates and master students and served as a TA 4x for master's level CS classes

2023 (summer) **Associate Principal**, Accenture Labs (R&D), San Francisco, CA, USA

- Designed and engineered Wizard-of-Oz task assistance system using Raspberry Pi and cameras
- Experimental design of in-person lab study, analyzed data with R, and presented at ACM CUI 2024
- Produced novel material samples on a digital embroidery machine for materials research

2021 (summer) **Research Intern**, Toyota Research Institute, Los Altos, CA, USA *(remote)*

- Analyzed and visualized a street image dataset (Git, Jupyter, Docker, S3, Python, R)

2017–2020 **Human-Machine Interface Researcher**, Jaguar Land Rover, Coventry, UK

- Led 2 research collaborations with Cambridge University, resulting in 2 journal articles
- Developed protocols and conducted HCI/human factors studies on the bench, simulator, and on-road
- Designed HMI research prototypes using Adobe CS and Arduino for internal demonstrations
- Delivered reports on GDPR and human factors to Product Engineering, informing product requirements
- Collaborated in cross-functional teams using Jira/Confluence, Rational Rhapsody and MS Office
- Oxford-Cambridge Rising Women in Science and Engineering, Global Finalist in Tata and JLR Innovista

2017 (summer) **Research Intern**, NTU IoX Center, National Taiwan University, Taiwan

- Designed a smart home user interface and used it as a probe for semi-structured qualitative interviews

2015 (fall) **Industrial Design Intern**, Next Nature Network, Amsterdam, Netherlands

- Used Arduino to program a remote-controlled RGB LED ring for a smart belt prototype
- Managed exhibits at Dutch Design Week and trade shows (logistics, graphic design and presenting)

HONOURS & AWARDS

Honors & Awards

Royal Commission of 1851 Industrial Fellowship (2020), £90,000
PhD Fellowship (University of Cambridge, Engineering Department). Declined in order to accept Cornell offer.

SELECTED PEER-REVIEWED PUBLICATIONS

Journal Articles

Natalie Friedman, **Alexandra Bremers**, Adelaide Nyanyo, Ian Clark, Yasmine Kotturi, Laura Dabbish, Wendy Ju, Nikolas Martelaro. "Understanding the Challenges of Maker Entrepreneurship". In: *Proceedings of the ACM on Human-Computer Interaction (PACM HCI): Computer-Supported Collaborative Work*. 2025 (forthcoming). DOI: https://arxiv.org/abs/2501.13765.

Nermin Caber, Jiaming Liang, Bashar I. Ahmad, Simon Godsill, **Alexandra Bremers**, Philip Thomas, David Oxtoby, Lee Skrypchuk. "Driver Profiling and Bayesian Workload Estimation for Adaptive In-Vehicle HMI". In: *IEEE Transactions on Intelligent Vehicles*. 2023. DOI: https://doi.org/10.1109/TIV.2023.3313419.

Alexandra W.D. Bremers, Ali Özgür Yöntem, Kun Li, Daping Chu, Valerian Meijering, Christian P. Janssen. "Perception of Perspective in Augmented Reality Head-Up Displays". In: *International Journal of Human-Computer Studies* (2021), p. 102693. ISSN: 1071-5819. DOI: https://doi.org/10.1016/j.ijhcs.2021.102693.

Conference Papers

Alexandra Bremers, Wendy Ju. "Can Machines Tell What People Want? Bringing Situated Intelligence to Generative AI". In: *HTTF 2024: Proceedings of the Halfway to the Future Symposium*. 2024. DOI: https://doi.org/10.1145/3686169.3686172.

Alexandra Bremers, Maria Teresa Parreira, Xy Fang, Natalie Friedman, Adolfo Ramirez-Aristizabal, Alexandria Pabst, Mirjana Spasojevic, Mike Kuniavsky, Wendy Ju. "The Bystander Affect Detection (BAD) dataset for failure detection in HRI". In: *2023 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*. 2023. DOI: https://doi.org/10.1109/IROS55552.2023.10342442.

David Goedicke, **Alexandra Bremers**, Sam Lee, Fanjun Bu, Hiroshi Yasuda, Wendy Ju. "XR-OOM: MiXed Reality Driving Simulation With Real Cars". In: *Proceedings of the ACM International Conference on Human Computer Interaction (CHI)*. 2022. DOI: https://doi.org/10.1145/3491102.3517704.