

Nicolai Marquardt | CURRICULUM VITAE

Principal Researcher at Microsoft Research and
Honorary Professor at University College London

EMAIL nicmarquardt@microsoft.com

WEB <https://www.microsoft.com/en-us/research/people/nicmarquardt/>

SUMMARY

- **Principal Researcher at Microsoft Research.** Researcher in ubiquitous computing and human-computer interaction, with focus on cross-device computing, proxemic interactions, and spatial computing. Designing ubicomp systems, development toolkits, and infrastructures – often incorporating sensing hardware/software to enable new forms of spatial interaction.
- **Track-record of top-tier research publications: 70 peer-reviewed articles at conferences and journals** (e.g., ACM CHI, UIST, ISS, ISMAR, DIS, IEEE Computing, Biomedical Optics Express journal, ToCHI). Also published 2 books, 2 edited volumes, 3 patents, 6 scientific magazine articles, and 41 other peer-reviewed publications. Citation reach: 5573 citations, h-index of 36, i10-index of 72 (Google Scholar, June 2023).
- **Awards for quality/impact of research:** ACM ISS 2019 10-year Impact Award (*Proxemic interaction: designing for a proximity and orientation-aware environment*), Best Paper Award at ACM ITS 2010, five Best Paper Honourable Mention Awards (ACM CHI 2021, 2016, 2015; ISS 2018), and a ACM ITS Best Demo Award 2014.
- **Service in research community: Conference Co-Chair** for ISS in 2016, **Co-Chair of Editorial Board PACM HCI** for ISS 2020, Subcommittee Co-Chair at CHI 2019 and 2020, academic service in 17 Conference Organisation Committees and 21 Program Committees.
- **Invited speaker at 38 talks** in academia and industry (e.g., University of Chicago, Autodesk, British Computer Society, University of St Andrews, Fraunhofer, BBC, Nokia, British Telecom, LMU Munich, University of Konstanz, University of Waterloo).
- **Previously Professor at University College London:** primary or secondary supervisor of 14 PhD students (5 graduated) and 55 BSc, MSc, and MEng students. Supervisor of 3 post-doctoral research associates. **International collaborative research projects:** Securing academic, governmental, and industrial research funding of \$8.85 million as primary- or co-investigator (EPSRC, UK DFID, INRIA, Microsoft, BBC, SNAP).
- **Experienced instructor of courses, tutorials, and workshops in academia and industry:** course instructor of 6 modules/courses: interaction design, physical computing, and ubiquitous computing. **26 guest lectures and tutorials/workshops** in academia and industry (proxemic interactions, ubiquitous computing, and sketching/design). 7 Nominations (Roll of Honour) for UCL Student Choice Awards (3x 2021, 2x 2019, 2018, 2017). **Fellow of the Higher Education Academy** (FHEA, 2016). **External examiner** at 14 PhD defenses (e.g., University of Waterloo, Lancaster University, University Paris Saclay).
- **Co-author of two textbooks:** *Sketching User Experiences: The Workbook* (Morgan Kaufmann 2011), over 35k copies sold; and *Proxemic Interactions: From Theory to Practice* (Morgan & Claypool 2015), about proxemic-aware devices in ubiquitous computing ecologies.
- **Outreach impact:** organised creative coding and maker events (with ~1500 people over the past 8 years) at the *London Science Museum*, *London Natural History Museum*, *Royal Institution Masterclasses*, *Mozilla Festival*, primary and secondary schools across London and the UK, and other national events. **Research regularly covered in print/online media**, e.g., *New Scientist*, *The Telegraph*, *MIT Technology Review* online, *CBC Radio*, *Engadget*, *PC World*, *IDG News*, and others.

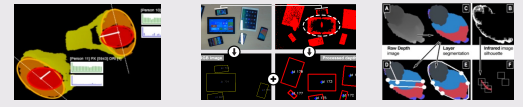
Overview of research in **proxemic interaction, spatial computing, and cross-device interaction**



Ubiquitous computing ecologies

Building new platforms and toolkits for spatial sensing and rapid prototyping

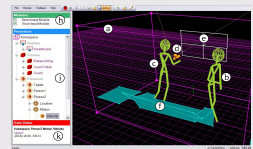
- GroupTogether [UIST '12]: Spatial sensing of people and mobile devices via depth-sensing, RF trilateration, and motions sensors.
- HuddleLamp [ISS '14]: Spatial sensing of mobile devices via depth-sensing and RGB reflectance.
- EagleSense [CHI '17]: Spatial sensing of people and devices, with top-down depth-sensing.



Other prototyping and development toolkits:

- TanGI [ISMAR '20]: Tangible proxies for embodied object exploration and manipulation in virtual reality
- WatchConnect [CHI '15]: Rapid prototyping of sensor- and smartwatch-centric cross-device applications
- Touch ID [ITS '11]: Prototyping finger- and posture-aware interfaces
- Haptic Touch [TEI '12]: For building tactile feedback tabletop applications
- Shared Phidgets [TEI '07]: For developing distributed physical user interfaces
- Deep Thermal Imaging [CHI '18]: For thermal imaging material recognition through spatial surface temperature patterns

Proximity Toolkit [UIST '11]: Rapid prototyping of proxemic-aware systems and spatially-aware devices.



Designing new spatial interactions and proxemic-aware devices

Formative studies and evaluation of hardware, software, and interaction techniques



Conducting formative studies to inform research direction (e.g., current practices of multi-device use) and evaluation dynamics to better understand interaction dynamics with prototypes.

Study investigating the role and benefit of overview devices in multi-device collaboration [CHI '18].



Gesture elicitation study for opt-in and opt-out from interactions with large interactive surfaces [ISS '17].



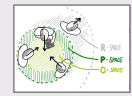
Large-scale study about everyday multi-device use, identifying trends and opportunities for design [CHI '22].



Synthesis of evaluation strategies for toolkit research; discussion of value, potential, and limitations [CHI '18].

TYPE 1: DEMONSTRATION	TYPE 2: USAGE	TYPE 3: PERFORMANCE
<ul style="list-style-type: none"> PROXIMITY AWARENESS SPATIAL AWARENESS COLLABORATION CO-LOCATION CO-OPERATION CO-EXISTENCE CO-LOCATION CO-OPERATION CO-EXISTENCE 	<ul style="list-style-type: none"> WAYS TO COLLECT DATA ANALYSIS PRESENTATION INTERACTION TECHNOLOGY TECHNOLOGY TECHNOLOGY TECHNOLOGY TECHNOLOGY 	<ul style="list-style-type: none"> PERFORMANCE PERFORMANCE PERFORMANCE PERFORMANCE PERFORMANCE PERFORMANCE PERFORMANCE PERFORMANCE PERFORMANCE

Proxemic Interaction imagines a world of devices that have fine-grained spatial knowledge of nearby people and other devices – their proximity, orientation, movement, and identity – and how such knowledge can be exploited in interaction design.



Social theory about people's use of space:

- Proxemics:** people's use of distance, approach & orientation during interpersonal encounters
- F-formations:** spatial configurations driving interactions
- Micro-mobility:** nuanced, fine-grained use of artefacts



Operationalizing proxemics for interaction design [Interactions '11]



Proxemic Interaction [ITS '10]: Exploration of interaction techniques in a proximity- and orientation-aware environment.



Gradual Engagement Design Pattern [ISS '12]: Facilitating information exchange between digital devices as a function of proximity.



Cross-device interaction via F-formations and micro-mobility [UIST '12].



Cross-device content curation using instrumental interaction [ISS '16].



AirConstellations [UIST '21]: In-air device formations for cross-devices interaction via multiple spatially-aware armatures.



SurfaceConstellations [CHI '18]: Modular hardware platform for ad-hoc reconfigurable cross-device workspaces.



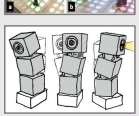
GazeConduits [CHI '20]: Calibration-free cross-device collaboration through gaze and touch.



Mobile co-located interaction supported by multi-device interaction techniques [ISS '14].



Proxemic Flow [Interact '15]: Dynamic peripheral floor visualizations for revealing and mediating large surface interactions.



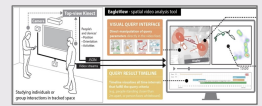
Machine Body Language [DIS '21]: Expressing a smart speaker's activity with intelligible physical motion and body language.

Tools to support studies of spatial interactions

Building and evaluating software to facilitate analysis of studies involving proxemic and spatial interactions (e.g., providing visual representations of spatial dynamics during collaboration and query language to analyze data).

EagleView [ISS '18]: a video analysis tool for visualizing and querying spatial interactions of people and devices

Tool for exploring collaborative interactions in tracked environments [Interact '15].



Hybrid environments, mixed form-factors of devices (fixed, semi-fixed, and mobile)



Mobile co-located interaction



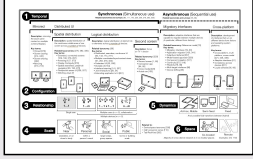
Other environments

Proxemic Interactions book [Morgan & Claypool '15]: Synthesis of proxemic interactions research, covering theory, design dimensions, and use cases.

Informing proxemic interactions [Pervasive '12]: addressing six ubicomp challenges.

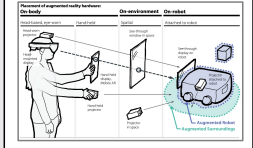
Synthesis of cross-device computing research area:

Taxonomy of cross-device computing: unifying research space, technology, interaction techniques [CHI '19].



Related:

Taxonomy of augmented reality interfaces for interaction with robots [CHI '22].



CURRENT EMPLOYMENT

- Since 2023 **Principal Researcher at Microsoft Research (USA)**
Part of the HCAIX group (Human-Computer and Artificial Intelligence Experiences)
- Since 2023 **Honorary Professor at University College London (United Kingdom)**
Department of Computer Science, UCL Interaction Centre

PREVIOUS EMPLOYMENT

- 08/2013 – 12/2022 **Professor in Interaction Design and Innovation, University College London (United Kingdom)**
Department of Computer Science, UCL Interaction Centre
Research in human-computer interaction, cross-device computing, ubiquitous computing, proxemic interactions, and spatial computing. Teaching modules/courses in interaction design, physical computing, prototyping, and computer science.
- Since 06/2022 **Professor/Chair**
07/2018 – 06/2022 **Associate Professor**
08/2016 – 07/2018 **Senior Lecturer**
08/2013 – 07/2016 **Lecturer**
- 07/2021 – 05/2021 **Part-time Research Consultant, Microsoft Research, Redmond (USA)**
EPIC research group, Ken Hinckley
Research projects on cross-device computing.
- 04/2020 – 08/2020 **Visiting Researcher, Microsoft Research, Redmond (USA)**
EPIC research group, Ken Hinckley
- 04/2016 – 06/2016 **Visiting Professor, University of California, Irvine (USA)**
UCI Department of Informatics
- 09/2008 – 07/2013 **PhD Candidate and Research Assistant, GroupLab, University of Calgary (Canada)**
Funded by AITF PhD scholarship.
Supervisor: Saul Greenberg
- 10/2011 – 01/2012 **Research internship at Microsoft Research Redmond (USA)**
Cross-device interaction via micro-mobility and F-formations.
Supervisor: Ken Hinckley
- 06/2008 – 08/2008 **Research internship at Microsoft Research Cambridge (United Kingdom)**
Rethinking RFID: visible and controllable RFID tags.
Supervisor: Alex Taylor, Nicolas Villar
- 07/2006 – 11/2006 **Research internship at Microsoft Research Cambridge (United Kingdom)**
Remote media spaces and tangible digital information.
Supervisor: Abigail Sellen, Richard Banks
- 09/2005 – 02/2006 **Visiting research student at the GroupLab, University of Calgary (Canada)**
Prototyping toolkit for distributed physical user interfaces.
Supervisor: Saul Greenberg

EDUCATION

- 05/2013 **PhD in Computer Science, University of Calgary (Canada)**
Department of Computer Science, Interactions Lab, GPA 4.0/4.0
Thesis: *Proxemic Interactions in Ubiquitous Computing Ecologies.*
Supervisor: Saul Greenberg

04/2008 **Diplom (MSc equivalent), Media Systems,
Bauhaus-University Weimar** (Germany)
Graduated with distinction. GPA 3.9/4.0, Senior GPA 4.0/4.0.
Thesis: *Distributed Physical Interfaces with Shared Phidgets.*
Supervisor: Tom Gross

AWARDS AND HONORS

- 2021 ACM CHI Best Paper Honorable Mention Award,
"Interaction Illustration Taxonomy: Classification of Styles and Techniques for Visually
Representing Interaction Scenarios",
top 5% of papers
- 2021 ACM CHI Best Paper Honorable Mention Award,
"Sketchnote Components, Design Space Dimensions, and Strategies for Effective Visual
Note Taking",
top 5% of papers
- 2019 ACM ISS 10-Year Impact Award,
"Proxemic Interaction: Designing for a Proximity and Orientation-Aware Environment",
Co-authored with Till Ballendat and Saul Greenberg.
Awarded at ACM ISS 2019 in South Korea.
- 2018 ACM ISS Best Paper Honorable Mention Award,
"EagleView: A Video Analysis Tool for Visualising and Querying Spatial Interactions of
People and Devices",
top 5% of papers
- 2016 ACM CHI Best Paper Honorable Mention Award,
"Physikit: Data Engagement Through Physical Ambient Visualizations in the Home.",
top 5% of papers
- 2015 ACM CHI Best Paper Honorable Mention Award,
"As Light as your Footsteps: Altering Walking Sounds to Change Perceived Body Weight,
Emotional State and Gait",
top 5% of papers
- 2014 ACM ITS Best Demo Award,
"Demonstrating HuddleLamp: Spatially-Aware Mobile Displays for Ad-hoc Around-the-
Table Collaboration"
- 2010 ACM ITS Best Paper Award,
"Proxemic Interaction: Designing for a Proximity and Orientation-Aware Environment"
top 1% of papers

TEACHING AWARDS AND NOMINATIONS

- 2021 Three Nominations for UCL Student Choice Awards: Roll of Honour
 - Exceptional Feedback
 - Inspiring Teaching Delivery
 - Excellent Personal Tutoring
- 2019 Two Nominations for UCL Student Choice Awards: Roll of Honour
 - *Inspiring Teaching Delivery*
 - *Excellent Personal Tutoring*
- 2018 Nomination for UCL Student Choice Awards: Roll of Honour
 - *Inspiring Teaching Delivery*

- 2017 Nomination for UCL Student Choice Awards: Roll of Honour
- *Outstanding Teaching*
- 2010 Teaching Award for quality in graduate teaching (TA) at University of Calgary Computer Science Department,
TA in course CPSC 581
(Human-Computer Interaction II)

PUBLICATIONS

CONFERENCE PUBLICATIONS

- [C.62] Tigmanshu Bhatnagar, Vikas Upadhyay, Anchal Sharma, P V Madhusudhan Rao, Mark Miodownik, Nicolai Marquardt, Catherine Holloway. 2023. Pixelated Interactions: Exploring Pixel Art for Graphical Primitives on a Tactile Display. To appear in DIS'23 Designing Interactive Systems Conference, July 10 to 14, 2023, Pittsburgh, PA, USA.
- [C.61] Molly Jane Nicholas, Nicolai Marquardt, Michel Pahud, Nathalie Riche, Hugo Romat, Christopher Collins, David Ledo, Rohan Kadekodi, Badrish Chandramouli, and Ken Hinckley. 2023. Escapement: A Tool for Interactive Prototyping with Video via Sensor-Mediated Abstraction of Time. In Proceedings of the 2023 CHI Conference on Human Factors in Computing Systems (CHI '23). Association for Computing Machinery, New York, NY, USA, Article 799, 1–14. <https://doi.org/10.1145/3544548.3581115>
- [C.60] Richard Li, Teddy Seyed, Nicolai Marquardt, Eyal Ofek, Steve Hodges, Mike Sinclair, Hugo Romat, Michel Pahud, Jatin Sharma, William A.S. Buxton, Ken Hinckley, and Nathalie Riche. 2023. AdHocProx: Sensing Mobile, Ad-Hoc Collaborative Device Formations using Dual Ultra-Wideband Radios. In Proceedings of the 2023 CHI Conference on Human Factors in Computing Systems (CHI '23). Association for Computing Machinery, New York, NY, USA, Article 623, 1–18. <https://doi.org/10.1145/3544548.3581300>
- [C.59] Ye Yuan, Nathalie Riche, Nicolai Marquardt, Molly Jane Nicholas, Teddy Seyed, Hugo Romat, Bongshin Lee, Michel Pahud, Jonathan Goldstein, Rojin Vishkaie, Christian Holz, Ken Hinckley (2022). Understanding Multi-Device Usage Patterns: Physical Device Configurations and Fragmented Workflows. Proceedings of ACM CHI 2022.
- [C.58] Hugo Romat, Nicolai Marquardt, Ken Hinckley, Nathalie Henry Riche (2022). Style Blink: Exploring Digital Inking of Structured Information via Handcrafted Styling as a First-Class Object. Proceedings of ACM CHI 2022.
- [C.57] Ryo Suzuki, Adnan Karim, Tian Xia, Hooman Hedayati, Nicolai Marquardt (2022). Augmented Reality and Robotics: A Survey and Taxonomy for AR-enhanced Human-Robot Interaction and Robotic Interfaces. Proceedings of ACM CHI 2022.
- [C.56] Nicolai Marquardt, Nathalie Henry Riche, Christian Holz, Hugo Romat, Michel Pahud, Frederik Brudy, David Ledo, Chunjong Park, Molly Jane Nicholas, Teddy Seyed, Eyal Ofek, Bongshin Lee, William A.S. Buxton, Ken Hinckley (2021). AirConstellations: In-Air Device Formations for Cross-Device Interaction via Multiple Spatially-Aware Armatures. In Proceedings of ACM UIST 2021.
- [C.55] Mirzel Avdic, Nicolai Marquardt, Yvonne Rogers, Jo Vermeulen (2021). Machine Body Language: Expressing a Smart Speaker's Activity with Intelligible Physical Motion. In Proceedings of Conference on Designing Interactive Systems – ACM DIS 2021.
- [C.54] Justas Brazauskas, Susan Lechelt, Ethan Wood, Rebecca Evans, Su Adams, Emma McFarland, Nicolai Marquardt, Yvonne Rogers (2021). DataMoves: Entangling Data and Movement to Support Computer Science Education. In Proceedings of Conference on Designing Interactive Systems – ACM DIS 2021.

- [C.53] Laura-Bianca Bilius, Radu-Daniel Vatavu, Nicolai Marquardt (2021). Smart Vehicle Proxemics: A Conceptual Framework Operationalizing Proxemics in the Context of Outside-the-vehicle Interactions. In Proceedings of Interact 2021.
- [C.52] Laura-Bianca Bilius, Radu-Daniel Vatavu, Nicolai Marquardt (2021). Exploring Application Opportunities for Smart Vehicles in the Continuous Interaction Space Inside and Outside the Vehicle. Short paper. In Proceedings of Interact 2021.
- [C.51] Tigi Manual Bhatnagar, Nicolai Marquardt, Mark Miodownik, Catherine Holloway (2021). Transforming a Monolithic Sheet of Nitinol into a Passive Reconfigurable Tactile Pixel Array Display at Braille Resolution. IEEE World Haptics Conference 2021 (WHC), Virtual (Previously Montreal Canada). 2021 IEEE World Haptics Conference (WHC). IEEE. 23 July 2021
- HONORABLE MENTION* [C.50] Rebecca Zheng, Marina Fernández Camporro, Hugo Romat, Nathalie Henry Riche, Benjamin Bach, Fanny Chevalier, Ken Hinckley, Nicolai Marquardt (2021) Sketchnote Components, Design Space Dimensions, and Strategies for Effective Visual Note Taking. In Proceedings of ACM CHI 2021.
- HONORABLE MENTION* [C.49] Axel Antoine, Sylvain Malacria, Nicolai Marquardt, Géry Casiez (2021) Interaction Illustration Taxonomy: Classification of Styles and Techniques for Visually Representing Interaction Scenarios. In Proceedings of ACM CHI 2021.
- [C.48] Susan Lechelt, Frederik Brudy, Nicolai Marquardt, Yvonne Rogers (2021) EvalMe: Exploring the Value of New Technologies for In Situ Evaluation of Learning Experiences. In Proceedings of ACM CHI 2021.
- [C.47] DaYe Kang, Tony Ho, Nicolai Marquardt, Bilge Mutlu, Andrea Bianchi (2021) ToonNote: Improving Communication in Computational Notebooks Using Interactive Data Comics. In Proceedings of ACM CHI 2021.
- [C.46] Martin Feick, Scott Bateman, Anthony Tang, André Miede, Nicolai Marquardt (2020) Tangi: Tangible Proxies For Embodied Object Exploration And Manipulation In Virtual Reality. In Proceedings of ISMAR 2020.
- [C.45] Dingyi Wei, Ava Fatah gen. Schieck, and Nicolai Marquardt. 2020. A Model of the Deviation between the Intended and the Actual Experiences with Interactive Installations. In Proceedings of the 11th Nordic Conference on Human-Computer Interaction: Shaping Experiences, Shaping Society (NordICHI '20). Association for Computing Machinery, New York, NY, USA, Article 99, 1–3.
- [C.44] Kim Sauvé, Saskia Bakker, Nicolai Marquardt, and Steven Houben. 2020. LOOP: Exploring Physicalization of Activity Tracking Data. In Proceedings of the 11th Nordic Conference on Human-Computer Interaction: Shaping Experiences, Shaping Society (NordICHI '20). Association for Computing Machinery, New York, NY, USA, Article 52, 1–12.
- [C.43] Susan Lechelt, Yvonne Rogers, Nicolai Marquardt (2020) Coming to your senses: promoting critical thinking about sensors through playful interaction in classrooms. In Proceedings of ACM IDC 2020.
- [C.42] Marina Fernández Camporro, Nicolai Marquardt (2020). Live Sketchnoting Across Platforms: Exploring the Potential and Limitations of Analogue and Digital Tools. In Proceedings of ACM CHI 2020.
- [C.41] Simon Voelker, Sebastian Hueber, Christian Holz, Christian Remy, Nicolai Marquardt (2020). GazeConduits: Calibration-Free Cross-Device Collaboration through Gaze and Touch. In Proceedings of ACM CHI 2020.
- [C.40] Frederik Brudy, Christian Holz, Roman Rädle, Chi-Jui Wu, Steven Houben, Clemens Nylandsted Klokmose, and Nicolai Marquardt. 2019. Cross-Device Taxonomy: Survey, Opportunities and Challenges of Interactions Spanning Across Multiple Devices. In

- Proceedings of the 2019 CHI Conference on Human Factors in Computing Systems (CHI '19). ACM, New York, NY, USA, Paper 562, 28 pages.
- [C.39] Axel Antoine, Sylvain Malacria, Nicolai Marquardt, Géry Casiez: Esquisse: Using 3D Models Staging to Facilitate the Creation of Vector-Based Trace Figures. *INTERACT* (2) 2019: 496-516
- HONORABLE MENTION [C.38] Frederik Brudy, Suppachai Suwanwatcharachat, Wenyu Zhang, Steven Houben, and Nicolai Marquardt. 2018. EagleView: A Video Analysis Tool for Visualising and Querying Spatial Interactions of People and Devices. In *Proceedings of the 2018 ACM International Conference on Interactive Surfaces and Spaces (ISS '18)*. ACM, New York, NY, USA, 61-72.
- [C.37] Nicolai Marquardt, Frederik Brudy, Can Liu, Benedikt Bengler, Christian Holz (2018). SurfaceConstellations: A Modular Hardware Platform for Ad-Hoc Reconfigurable Cross-Device Workspaces. In *Proceedings of the 2018 CHI Conference on Human Factors in Computing Systems (CHI '18)*. ACM, New York, NY, USA.
- [C.36] Zuzanna Lechelt, Yvonne Rogers, Nicola Yuill, Lena Nagl, Grazia Ragone, Nicolai Marquardt (2018). Inclusive Computing in Special Needs Classrooms: Designing for All. In *Proceedings of the 2018 CHI Conference on Human Factors in Computing Systems (CHI '18)*. ACM, New York, NY, USA.
- [C.35] Youngjun Cho, Nadia Bianchi-Berthouze, Nicolai Marquardt, Simon J. Julier (2018). Deep Thermal Imaging: Proximate Material Type Recognition in the Wild through Deep Learning of Spatial Surface Temperature Patterns. In *Proceedings of the 2018 CHI Conference on Human Factors in Computing Systems (CHI '18)*. ACM, New York, NY, USA.
- [C.34] Frederik Brudy, Joshua Kevin Budiman, Steven Houben, Nicolai Marquardt (2018). Investigating Practices When Using an Overview Device in Collaborative Multi-Surface Trip-Planning. In *Proceedings of the 2018 CHI Conference on Human Factors in Computing Systems (CHI '18)*. ACM, New York, NY, USA.
- [C.33] David Ledo, Steven Houben, Jo Vermeulen, Nicolai Marquardt, Lora Oehlberg, Saul Greenberg (2018). Evaluation Strategies for HCI Toolkit Research. In *Proceedings of the 2018 CHI Conference on Human Factors in Computing Systems (CHI '18)*. ACM, New York, NY, USA.
- [C.32] Geraint Rhys Sethu-Jones, Yvonne Rogers, Nicolai Marquardt (2018). Data in the garden: a framework for exploring provocative prototypes as part of research in the wild. In *Proceedings of the 29th Australian Conference on Computer-Human Interaction*, ACM.
- [C.31] Isabel Benavente Rodriguez, Nicolai Marquardt (2017). Gesture Elicitation Study on How to Opt-in & Opt-out from Interactions with Public Displays. In *Proceedings of the 2017 ACM on Interactive Surfaces and Spaces (ISS '17)*. ACM.
- [C.30] Chi-Jui Wu, Steven Houben, and Nicolai Marquardt (2017). EagleSense: Tracking People and Devices in Interactive Spaces using Real-Time Top-View Depth-Sensing. In *Proceedings of the 2017 CHI Conference on Human Factors in Computing Systems (CHI '17)*. ACM, New York, NY, USA, 3929-3942.
- [C.29] Cho, Y., Bianchi, A., Marquardt, N., Bianchi-Berthouze, N. 2016. RealPen: Providing Realism in Handwriting Tasks on Touch Surfaces using Auditory-Tactile Feedback. In *Proceedings of the 29th Annual Symposium on User Interface Software and Technology (UIST '16)*. ACM, New York, NY, USA, 195-205.
- [C.28] Brudy, F., Houben, S., Marquardt, N., Rogers, Y. 2016. CurationSpace: Cross-Device Content Curation Using Instrumental Interaction. In *Proceedings of the 2016 ACM on Interactive Surfaces and Spaces (ISS '16)*. ACM.
- [C.27] Johnson, R., Shum, V., Rogers, Y., and Marquardt, N. 2016. Make or Shake: An Empirical Study of the Value of Making in Learning about Computing Technology. In *Proceedings of the the 15th International Conference on Interaction Design and Children (IDC '16)*. ACM, New York, NY, USA, 440-451.

- HONORABLE MENTION [C.26] Houben, S., Golsteijn, C., Gallacher, S., Johnson, R., Bakker, S., Marquardt, N., Capra, L., Rogers, Y. (2016) Physikit: Data Engagement Through Physical Ambient Visualizations in the Home. *Proceedings of CHI 2016*, ACM.
- [C.25] Marquardt, N., Schardong, F., Tang, A. (2015) EXCITE: EXploring Collaborative Interaction in Tracked Environments. *Proceedings of INTERACT (2) 2015*, pp. 89-97.
- [C.24] Vermeulen, J., Luyten, K., Coninx, K., Marquardt, N., and Bird, J. (2015) Proxemic Flow: Dynamic Peripheral Floor Visualizations for Revealing and Mediating Large Surface Interactions. *Proceedings of INTERACT (4) 2015*, pp. 264-281.
- [C.23] Olugbade, T., Bianchi-Berthouze, N., Marquardt, N., Williams, A. C. (2015) Pain Level Recognition using Kinematics and Muscle Activity for Physical Rehabilitation in Chronic Pain. In *Proceedings 6th Conf. Affective Computing and Intelligent Interaction*.
- [C.22] Ledo, D., Greenberg, S., Marquardt, N., and Boring, S. (2015) Proxemic-Aware Controls: Designing Remote Controls for Ubiquitous Computing Ecologies. In *Proceedings of the 17th International Conference on Human-Computer Interaction with Mobile Devices and Services (MobileHCI '15)*. ACM, New York, NY, USA, 187-198.
- [C.21] Houben, S., and Marquardt, N. (2015) WatchConnect: A Toolkit for Prototyping Smartwatch-Centric Cross-Device Applications. In *Proceedings of the 33rd Annual ACM Conference on Human Factors in Computing Systems (CHI '15)*. ACM, New York, NY, USA, 1247-1256.
- HONORABLE MENTION [C.20] Tajadura-Jiménez, A., Basia, M., Deroy, O., Fairhurst, M., Marquardt, N., and Bianchi-Berthouze, N. (2015). As Light as your Footsteps: Altering Walking Sounds to Change Perceived Body Weight, Emotional State and Gait. In *Proceedings of the 33rd Annual ACM Conference on Human Factors in Computing Systems (CHI '15)*. ACM, New York, NY, USA, 2943-2952. *Honorable mention, top 5%*.
- [C.19] Rädle, R. Jetter, H.C., Marquardt, N., Reiterer, H., Rogers, Y. (2014) HuddleLamp: Spatially-Aware Mobile Displays for Ad-hoc Around-the-Table Collaboration. In *Proceedings at ITS 2014*, ACM, pp. 45 - 54.
- [C.18] Olugbade, T. A. , Aung, M. S. H. , Marquardt, N., Williams, A. C. de C. , Bianchi-Berthouze, N. (2014) Bi-Modal Detection of Painful Reaching for Chronic Pain Rehabilitation Systems. In *Proceedings of ICMI 2014*, ACM.
- [C.17] Vermeulen, J., Luyten, K., Coninx, K., Marquardt, N. (2014) The design of slow-motion feedback. In *Proceedings of ACM Conference on Designing Interactive Systems – ACM DIS 2014*, 267-270.
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US Patent App. 13/829,657, 2013.

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- [EA.11] Olugbade, T. A., Marquardt, N., and Bianchi-Berthouze, N. (2014) A Robotic Assisting-Therapist for Chronic Pain Rehabilitation: Mood-State Recognition. HRI Pioneers Workshop 2014 at ACM HRI Conference.
- [EA.10] Marquardt, N. (2013) Proxemic interactions with and around digital surfaces. Tutorial at ACM Conference on Interactive Tabletops and Surfaces – ITS 2013. (St Andrews, UK), ACM, 493-494. 120-minute tutorial at conference.
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- [EA.3] Marquardt, N., Young, J., Sharlin, E. and Greenberg, S. (2009) Situated Messages for Asynchronous Human-Robot Interaction. In Adjunct Proc. Human Robot Interaction (Late Breaking Abstracts) - HRI'09. (San Diego, CA), 301-302, March 11-13.
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- [EA.1] Jain, A., Marquardt, N. and Taylor, A. (2008) Near-Future RFID. In Proceedings of Ethnographic Praxis in Industry Conference - EPIC. American Anthropology Association, 332-333. Artifact submission (similar to demonstration).

WORKSHOP SUBMISSIONS

- [W.4] Brudy, F., Marquardt, N., Rogers, Y., Sellen, A. and O'Hara, K. (2016). The Challenges of Using an Existing Cross-Device Interaction Prototype for Supporting Actual Curation Practices.
- [W.3] Vermeulen, J., Luyten, K., Coninx, K., Marquardt, N. (2014) Addressing Challenges in Crowded Proxemics-Aware Installations. In Social NUI workshop at DIS 2014.

- [W.2] Marquardt, N. and Greenberg, S. (2012) Sketchnotes for Visual Thinking in HCI. *In Proc. ACM Conference on Human Factors in Computing Systems: CHI Workshop on Visual Thinking and Digital Imagery*. (Workshop held at ACM CHI), 5 Pages, May 5.
- [W.1] Marquardt, N. and Taylor, A. (2009) RFID Reader Detector and Tilt-Sensitive RFID Tags. In *DIY for CHI: Methods, Communities, and Values of Reuse and Customization*. (Workshop held at the ACM CHI 2009 Conference, Boston, MA), (Buechley, L., Paulos, E., Rosner, D., Williams, A., Ed.), April 5.

WORKSHOP ORGANISATION

- [WO.8] Ru Zhang, Yuanchun Shi, Bjorn Schuller, Elisabeth Andre, Sharon Oviatt, Aaron J Quigley, Nicolai Marquardt, Ilhan Aslan, Ran Ju (2021) User Experience for Multi-Device Ecosystems: Challenges and Opportunities. *Proc. of CHI EA '21*. ACM.
- [WO.7] Nicolai Marquardt, Steven Houben, Michel Beaudouin-Lafon, and Andrew D. Wilson. 2017. HCITools: Strategies and Best Practices for Designing, Evaluating and Sharing Technical HCI Toolkits. In *Proceedings of the 2017 CHI Conference Extended Abstracts on Human Factors in Computing Systems (CHI EA '17)*. ACM, New York, NY, USA, 624-627.
- [WO.6] Houben, S., Marquardt, N., Vermeulen, J., Schöning, J., Klokmose, C., Reiterer, H., Korsgaard, H. and Schreiner, M. 2016. Cross-Surface: Challenges and Opportunities for “Bring Your Own Device” in the Wild. *Proc. of CHI EA '16*. ACM, 3366–3372.
- [WO.5] O’Kane, A.A., Hurst, A., Niezen, G., Marquardt, N., Bird, J. and Abowd, G. 2016. Advances in DIY Health and Wellbeing. *Proc. of CHI EA '16*. ACM, 3453–3460.
- [WO.4] Porcheron, M., Lucero, A., Quigley, A., Marquardt, N., Clawson, J. and O’Hara, K. 2016. Proxemic Mobile Collocated Interactions. *Proc. of CHI EA '16*. ACM, 3309–3316.
- [WO.3] Houben, S., Vermeulen, J., Klokmose, C. N., Marquardt, N. Schoening, J., Reiterer, H. (2015) Cross-Surface: Workshop on Interacting with Multi-Device Ecologies in the Wild. *Proceedings of ITS 2015*, ACM, pp. 485-489
- [WO.2] Gallacher, S., Golsteijn, C., Kalnikaite, V., Houben, S., Johnson, R., Harrison, D., Marquardt, N. (2015) SenCity 2: visualizing the hidden pulse of a city. Workshop proposal in the proceedings of the 2015 ACM International Joint Conference on Pervasive and Ubiquitous Computing and Proceedings of the 2015 ACM International Symposium on Wearable Computers. ACM, pp. 1391 – 1394.
- [WO.1] Hurtienne, J., Jetter, H.-C., Marquardt, N., Pederson, T. (2014) Ubicomp beyond devices: people, objects, space and meaning. Workshop at NordiCHI 2014: 837-840.

THESIS

- [T.2] Marquardt, N. (2013) Proxemic Interactions in Ubiquitous Computing Ecologies. PhD thesis, Department of Computer Science, University of Calgary, Calgary, Alberta, Canada, July.
- [T.1] Marquardt, N. (2008) Developer Toolkit and Utilities for Rapidly Prototyping Distributed Physical User Interfaces. Diplom Thesis, Bauhaus-University Weimar, Faculty of Media, Media Systems Science, Germany, March 10. Part of this research was done as visiting researcher at the Interactions Lab, University of Calgary.

INVITED RESEARCH TALKS AND KEYNOTES

- [I.37] Autodesk Research, Toronto, August 2022.
Designing Spatially-Aware Interaction Techniques for Dynamic Cross-device Workspaces

- [I.36] Tangible UI, Mixed Reality and Robotics Lab, University of Calgary, Canada, April 2021.
Journey through the Design Space of Cross-Device Interactions
- [I.35] Keynote at SPP 2199 - Scalable Interaction Paradigms for Pervasive Computing Environments Winter School, Germany, March 2021.
Five Lessons Learned in Sketching for HCI Research
- [I.34] Microsoft Research, USA, HCI Seminar, November 2020.
Cross-Device Interactions
- [I.33] HCI Seminar Talk Series, Microsoft Research, USA, April 2020. (Cancelled)
Proxemic Interactions in Ubicomp Ecologies
- [I.32] University of Chicago, USA, December 2019.
Cross-Device Interaction Research
- [I.31] Microsoft Research Faculty Summit, USA, 2019.
Theme: The Future of Work. Envisioning Fluid Cross-Device Experiences.
Design space of Cross-Device Interactions
- [I.30] Dagstuhl Seminar, Germany, July 2019.
Ubicomp Education
- [I.29] Adobe Research, Seattle, USA, June 2018.
Research overview: physical computing and interactive surfaces
- [I.28] University of Hamburg, Germany, January 2018.
Sketching in Human-Computer Interaction Research
- [I.27] Keynote at Summer School in Łódź, Poland, July 2017.
Sketching User Experiences for HCI Research
- [I.26] University of Calgary, Canada, May 2016.
Physical Computing Research
- [I.25] British Computer Society invited lecture. BCS Hertfordshire. UK, February 2016.
Turning Data into Things: Introduction to 3D Printing and Digital Fabrication
- [I.24] University of Middlesex, UK, October 2015.
Towards ad-hoc collaboration spaces with cross-device interaction techniques
- [I.23] Keynote at Fraunhofer Summer School, Rostock, Germany, August 2015.
Human-Computer Interaction: Foundations, Principles and Methods
- [I.22] LMU Munich, Germany, July 2015.
Interaction Design and Sketching User Experiences
- [I.21] University of Konstanz, Germany, July 2015.
Proxemic Interactions in Ubiquitous Computing Ecologies
- [I.20] University of Muenster, Germany, June 2015.
Towards ad-hoc collaboration spaces with cross-device interaction techniques
- [I.19] University of St Andrews, UK, April 2015.
Towards ad-hoc collaboration spaces with cross-device interaction techniques
- [I.18] Jakobs Foundation, Switzerland, April 2015.
CodeMe and Education
- [I.17] University of Middlesex, UK, January 2015.
Towards ad-hoc collaboration spaces with cross-device interaction techniques
- [I.16] Hasselt University, Belgium, October 2014.
Proxemic for Devices: Towards ad-hoc collaboration spaces with spatially-aware device

- [I.15] Bauhaus-University Weimar, Germany, April 2014.
Proxemic Interactions in Ubiquitous Computing Ecologies
- [I.14] INAOE Mexico, Winter School, January 2014.
Physical Computing and Prototyping
- [I.13] BBC, Euston Road Lab, London, January 2014.
Digital Fabrication
- [I.12] University of Waterloo, Canada, December 2013.
Proxemic Interactions
- [I.11] Nokia Research, Cambridge: October 2013.
Research in Physical Computing.
- [I.10] BT Research and Innovation, London, October 2013.
Proxemic Interactions
- [I.9] Keynote at Dagstuhl Seminar: Proxemics in Human-Computer Interaction, 2013.
Proxemic Interactions in Ubiquitous Computing Ecologies
- [I.8] Keynote at Proxemics in HCI workshop as part of NordiCHI 2012, Copenhagen, Denmark, October 2012.
Proxemic Interactions in Ubiquitous Computing Ecologies
- [I.7] MIT Media Lab, Fluid Interfaces Group, Cambridge, MA, USA, October 2012.
Proxemic Interactions in Ubiquitous Computing Ecologies
- [I.6] Ludwigs-Maximilian University, Munich, Germany, April 2012.
Proxemic Interactions in Ubiquitous Computing Ecologies
- [I.5] SMART Technologies, Calgary, Canada, September 2011.
Proxemic Interactions
- [I.4] University of Tokyo, Takeo Igarashi's lab, November 2011.
Research in Proxemic Interactions
- [I.3] University of Manitoba, Department of Computer Science, Winnipeg, Canada, August 2011.
Proxemic Interactions in Ubiquitous Computing Ecologies
- [I.2] Sketching in Hardware 2011, Philadelphia, PA, July 2011.
Inspired by Edison: Paper-pencil Sketching alongside Sketching in Hardware
- [I.1] Sketching in Hardware conference 2010, Los Angeles, CA, July 2010.
Visibility, Multiplicity, and Openness.

GUEST LECTURES AND TUTORIALS

- [L.27] Guest lecture at McGill University Montreal. September 2022.
Sketching User Experiences Workshop
- [L.26] Guest lecture as part of AT2030. Remote. August 2020.
Co-Design in Human-Computer Interaction
- [L.25] Sketching User Experiences: Tutorial. Workshop at University of Hamburg, 3 days, January 2018.
- [L.24] Research group as part of AT2030. Remote. May 2018.
Co-Design in Human-Computer Interaction
- [L.23] Sketching User Experiences: Tutorial. Workshop at University of Hamburg, 3 days, January 2017.

- [L.22] Sketching User Experiences: Tutorial. Workshop at University of Hamburg, 3 days, July 2016.
- [L.21] Sketching User Experiences: Tutorial, Tutorial at INTERACT conference, Bamberg, Germany, 180 minutes, September 2015.
- [L.20] *Sketching User Experiences*, at University of Konstanz Weimar, Germany, 90 minutes, July 2015.
- [L.19] *Sketching User Experiences: The hands-on course*, Tutorial at ACM CHI conference 2015, Seoul, South Korea, 180 minutes, May 2015.
- [L.18] Sketching User Experiences, at Ludwigs-Maximilian University, course on Interaction Design, Germany, 180 minutes, April 2015.
- [L.17] *Sketching User Experiences: The hands-on course*, Tutorial at ACM ITS conference 2014, Dresden, 90 minutes, November 2014.
- [L.16] *Visualising your Ideas for Developers: Sketching and Storyboarding*, Training course for Royal Free Hospital e-health Unit, April 2014.
- [L.15] *Physical Computing and Digital Fabrication*, Tutorial at INAOE UbiHealth winter school, Mexico, 180 minutes, January 2014.
- [L.14] *Sketching User Experiences*, at Bauhaus-University Weimar, Weimar, Germany, 180 minutes, 2014.
- [L.13] *Sketching User Experiences*, at Ludwigs-Maximilian University, course on Interaction Design (Alexander Wiethoff and Heinrich Hussmann), Munich, Germany, 180 minutes, April 2014.
- [L.12] *Sketching User Experiences: Stories, Strategies, and Surfaces*, Tutorial at ACM ITS conference 2013, St Andrews, UK, 90 minutes, November 2013.
- [L.11] *Nine Stories about Sketching in Science, Art, and Engineering* Chalmers University, Sweden, 90 minutes, October 2013.
- [L.10] *Sketching User Experiences: Hands-on Workshop* University of Calgary, Canada, 60 minutes, October 2013.
- [L.9] *Sketching User Experiences*, at Ludwigs-Maximilian University, course on Interaction Design (Alexander Wiethoff and Heinrich Hussmann), Munich, Germany, 180 minutes, April 2013.
- [L.8] *Sketching User Experiences: Stories, Strategies, and Surfaces*, Tutorial at ACM ITS conference 2012, Boston, MA, 90 minutes, November 2012.
- [L.7] *The Proximity Toolkit*, University of Calgary, course on Ubiquitous Computing (CPSC 781, Saul Greenberg), 90 minutes, October 2012.
- [L.6] *Sketching User Experiences: Stories, Strategies, and Surfaces*, NSERC SurfNet Annual General Meeting, Kitchener, Ontario, Canada, 90 minutes, September 2012.
- [L.5] *Sketching User Experiences*, SMART Technologies (invited by: Edward Tse, Kevin Viggers), Calgary, Alberta, Canada, 60 minutes, August 2012.
- [L.4] *Sketching User Experiences*, at Ludwigs-Maximilian University, course on Interaction Design (Alexander Wiethoff and Heinrich Hussmann), Munich, Germany, 180 minutes, April 2012.
- [L.3] *Beyond Keyboard and Mouse: Novel Computer Interfaces in Education*, Calgary City Teachers' Convention (CCTC), 90 min., Calgary, Alberta, Canada, February 2012.
- [L.2] *Programming Microcontrollers with the Microsoft .NET Micro Framework 4.0 Platform*, University of Calgary, course on Ubiquitous Computing (CPSC 781, Saul Greenberg), 180 minutes, March 2011.

- [L.1] *Phidgets – Hardware for Prototyping Ubiquitous Computing Applications*, at Bauhaus-University Weimar, course on Ubiquitous Computing (Tom Gross).
90 minutes, June 2006.

RESEARCH FUNDING AND GRANTS

- 2022 – 2027 EPSRC Network Grant.
“Pro2 Network+: From Prototyping to Production of Digital Devices”
Funding amount: £2,600,000
Co-I (PI: Mike Fraser, Co-I: Anne Roudaut, Steve Hodges, Jason Alexander, Boriana Koleva)
- 2021 – 2022 Funding for Teaching Activities through Snap Creative Challenge 2021.
“Designing Hybrid Tangible+AR Co-located Social Experiences”
Funding amount: \$10,000 (~ £7,150)
PI (Co-I’s: Yvonne Rogers, Catherine Holloway, Simon Julier, Dinah Lammiman)
- 2021 – 2025 UK Department for International Development (DFID)
“Life Changing Assistive Technology for All – AT2030”
Funding amount: £4,100,000 (external)
Co-I (PI: Catherine Holloway)
- 2020 – 2021 Strategic Partnership Seed Fund, UCL and IIT Delhi
“Refreshable Tactile Drawing”
Funding amount: £10,000
Co-I (PI: Catherine Holloway, Co-I: Tigmanshu Bhatnagar)
- 2020 – 2021 Proof of Concept (PoC) Fund, UCL Business (UCLB)
“Actuation system for refreshable and interactive tactile displays for blind and partially sighted people”
Funding amount: £20,000
30-017; SV POC number: 20-001
Co-I (PI: Catherine Holloway, Co-I: Tigmanshu Bhatnagar)
- 2019 – 2020 EPSRC Impact Acceleration Program
“Dance and Coding Knowledge Exchange”
Funding amount: £14,815 – EP/R511638/1
Co-I (PI: Yvonne Rogers)
- 2017 – 2018 INRIA Lille-Nord Europe Center
“Understanding divided attention in the cross-device ecology”
Funding amount: £12,000
Co-I (PI: Sylvain Malacria, INRIA, France)
- 2016 – 2019 Microsoft Research, EMEA Scholarship Programme
“Ad-hoc Cross-Device Interactions Facilitating Small-Group Collaborative Explorations and Curation of Historic Documents”
Funding amount: £96,794
PI (Co-I: Yvonne Rogers)
- 2015 – 2018 BBC Research & Development and EPSRC iCASE Studentship.
“Making the Future: putting people at the centre of the Internet of Things”
Funding amount: £92,694
Co-PI (with Yvonne Rogers)
- 2015 – 2017 EPSRC Doctoral Prize of Aisling Ann O’Kane, UCL BEAMS.
“Empowering Adults to Create Bespoke T1 Diabetes Self-Care Technology Through Community-Based Knowledge Transfer and DIY Maker Culture”
Funding amount: £109,439 – EP/M507970/1
Co-PI (with Aisling O’Kane, Ann Blandford)

- 2014 – 2016 Strategic Research Fund, Department of Computer Science.
“CodeMe - Towards Creative Coding of IoT”
 Funding amount: £10,500 (3 x £3,500)
 Co-PI (with Yvonne Rogers)
- 2013 – 2014 IoE/UCL Strategic Partnership Ideas Incubator Fund:
“New forms of Portfolio Assessment: Peerwise+”
 Funding amount: £2,000
 Co-PI (with Yvonne Rogers)
- 2014 – 2017 BBC and Department of Computer Science UCL
Senior Research Associate position in Physical Computing
 Funding amount: approximately £112,512
 Co-PI (with Yvonne Rogers)
- 2013 – 2015 BBC Learning
MakeMe and CodeMe hardware development seed-funding
 Funding amount: £4,000
 Co-PI (with Yvonne Rogers)
- 2010 – 2013 Alberta Innovates Technology Futures (AITF),
 Computer Science Graduate Student Scholarship, Canada
 Funding amount: £68,400 (£22,800 p.a. for three years). Role: PI
- 2008 – 2010 iCORE PhD Scholarship in ICT,
 Alberta Informatics Circle of Research Excellence, Canada
 Funding amount: £45,600 (£22,800 p.a. for two years). Role: PI

OTHER GRANTS AND TRAVEL FUNDING

- 2015 Invitation and travel funding for Microsoft Research Faculty Summit, Paris, France
 Funding amount: £1,500.
- 2015 Travel funding grant by Jacobs Foundation to attend conference “eKIDS: technologies for research and invention with children and youth” at Schloss Marbach
 Funding amount: £1,400.
- 2014 Funding for secondment and teaching at UbiHealth Winter School, Mexico
 Funding amount: £1,800.
- 2013 Invitation and travel funding to attend The Rank Prize Funds Symposium on Natural User Interfaces, Augmented Reality and Beyond: Challenges at the Intersection of HCI and Computer Vision. Invitation by: Sharam Ihzadi and Andrew Blake (Microsoft Research)
 Funding amount: approximately £1,100.
- 2009 – 2012 Department Research Award, Computer Science, University of Calgary
 Funding amount: £2,800 p.a., £8,400 total (declined due to funding cap).
- 2005 – 2007 Graduate scholarship of the German National Academic Foundation.
 Funding amount: £5,724 p.a., £11,448 in total (declined due to funding cap).
- 2005 – 2006 Travel funding of DAAD for research visit at the University of Calgary,
 Funding amount: £2,970
- 2005 – 2006 Travel funding of the German National Academic Foundation for research visit at the University of Calgary,
 Funding amount: £2,478 (declined due to funding cap)

TEACHING

- 2013 – 2022 Instructor, PSYC0097 (previously PSYCGI07), Interaction Design, HCI MSc Module at UCL
- 2015 – 2022 Instructor PSYC0096 (previously PSYCGI16), Physical Computing, HCI MSc Module at UCL
- 2014 Co-Instructor PSYCGI12, Design Experience II, HCI MSc Module at UCL
Project supervision of HCI projects and assessment (31 students).
- 2014 – 2017 Co-Instructor COMP3012, Interaction Design, CS BSc Module at UCL
Course preparation, giving lectures, running tutorials and assessment (153 students).
- 2012 Teaching assistant/co-instructor CPSC 581, Human-Computer Interaction II
- 2010 Teaching assistant CPSC 701.81, Ubiquitous Computing
- 2009 Teaching assistant CPSC 581, Human-Computer Interaction II
Received Department of Computer Science TA award
- 2009 Teaching assistant for Computer Science Continuous Tutorials
- 2006 Teaching assistant for supervising research project Swarm Intelligence II
- 2005 Teaching assistant, Web Technologies I
- 2003 – 2004 Teaching assistant, Programming Lectures and Software Engineering
- 2003 – 2005 Mentor for new CS students during their first semester. Provided 1-to-1 help to students, organized events and workshops (~25 students).

POSTDOCS AND RESEARCH VISITORS

- 2019 Martin Feick, Visiting Researcher, 6-months Research Visit
Collaborative research project with University of Toronto, Canada
- 2014 – 2016 Steven Houben, Post-Doctoral Researcher, Intel ICRI
Co-supervision with Yvonne Rogers
- 2015 – 2016 Aisling Ann O’Kane, Post-Doctoral Researcher.
EPSRC Doctoral Prize
“Empowering Adults to Create Bespoke T1 Diabetes Self-Care Technology Through Community-Based Knowledge Transfer and DIY Maker Culture”
- 2013 – 2015 Venus Shum, Post-Doctoral Researcher. UCL Department of Computer Science and BBC funding for Senior Research Associate position in Physical Computing.
- 2013 – 2014 Steven Houben, Visiting Researcher, 6-months Research Visit
Collaborative research project with ITU, Copenhagen

PHD STUDENT SUPERVISION

- 01/2022 – 12/2022 Elliott Brooks, University College London
Primary supervisor, Co-supervision with Diego Martinez Plasencia
- 01/2022– 12/2022 Wen Frances Mo, University College London
Secondary supervisor, Co-supervision with Catherine Holloway
- 09/2019 – 09/2022 Marina Fernandez Camporro, University College London
Primary supervisor, Co-supervision with Catherine Holloway

- 08/2019– 12/2022 Mohamed Abd El Ghani, University College London
Secondary supervisor, Co-supervision with Nadia Berthouze
- 08/2019– 12/2022 Dingyi Wei, University College London
Secondary supervisor, Co-supervision with Ava Fatah gen. Schieck
(Bartlett School of Architecture)
- 05/2019– 12/2022 Albert Hartmann Higgins, University College London
Secondary supervisor, Co-supervision with Catherine Holloway
- 09/2018– 12/2022 Tigmanshu Bhatnagar, University College London
Secondary supervisor, Co-supervision with Catherine Holloway
- 09/2018– 12/2022 Ngoi Ying Priscilla Wong, University College London
Secondary supervisor, Co-supervision with Duncan Brumby
- 10/2018– 12/2022 Felipe Andres Sheward Garcia, University College London
Secondary supervisor, Co-supervision with Daniela Romano
- 09/2015 – 02/2020 Susan Lechelt, PhD student, University College London
Secondary supervisor, Co-supervision with Yvonne Rogers
Now: Post-doctoral Researcher at University of Edinburgh
- 01/2015 – 01/2020 Frederik Brudy, PhD student, University College London
Microsoft Research Cambridge and UCL co-funded PhD studentship
Primary supervisor, Co-supervision with Yvonne Rogers
Now: Senior Researcher at Autodesk Research, Toronto, Canada
- 09/2015 – 11/2018 Youngjun Cho, PhD student, University College London
Secondary supervisor, Co-supervision with Nadia Berthouze
Now: Associate Professor at UCL
- 09/2013 – 11/2017 Temi Olugbade, PhD student, University College London
Secondary supervisor, Co-supervision with Nadia Berthouze
Now: Post-doctoral Researcher at UCL
- 09/2013 – 08/2015 Jessi Baker, PhD student, University College London
Secondary supervisor, Co-supervision with Yvonne Rogers
- 09/2013 – 11/2018 Geraint Jones, PhD student, University College London
Secondary supervisor, Co-supervision with Yvonne Rogers
Now: UX Researcher at Expedia

BSC AND MSc THESIS SUPERVISION (FINAL DISSERTATION)

- 01/2021 – 09/2021 Anahita Hedayati, HCI MSc Final Project, University College London
Exploring the Design Space of Visualization Techniques for Cross-Device Interconnectivity
- 01/2021 – 09/2021 Ann Tran, HCI MSc Final Project, University College London
The Sketchnoting Process Using Analog Tools: Visual Notetaking Behaviors Before, During, and After a Presentation
- 01/2021 – 09/2021 Kitti Horvath, HCI MSc Final Project, University College London
Styles and Techniques for Pen-Based Input
- 01/2021 – 09/2021 Rebecca McCallum, HCI MSc Final Project, University College London
Sketch-based Visual Language to Mediate Conversations about AI Systems
- 01/2021 – 09/2021 Aleksander Lagowski, HCI MSc Final Project, University College London
Ideation and Sketching Toolkit for Cross-Device Experiences
- 01/2021 – 09/2021 Luke Snitter, HCI MSc Final Project, University College London
DistributAR: An AR-powered toolkit for rapid cross-device prototyping

- 06/2019 – 09/2019 George Hanson, HCI MSc Final Project, University College London
A Gesture Elicitation Study on Engagement and Disengagement Techniques with Cross-Device Setups
- 06/2019 – 09/2019 Marina Fernandez Camporro, HCI MSc Final Project, University College London
Live Sketchnoting Across Platforms: Exploring the Potential and Limitations of Analogue and Digital Tools. *Published as full paper at ACM CHI 2020*
- 06/2019 – 09/2019 Yiyang Ding, HCI MSc Final Project, University College London
Sketch-based PowerPoint: A Web-based Tool, for Creating Sketched-based Live Presentations
- 06/2019 – 09/2019 Rebecca Zheng, HCI MSc Final Project, University College London
Flexible Notetaking: Design Elements, Common Strategies and Techniques for Creating Sketchnotes
- 06/2019 – 09/2019 Supanij Leelataweewud, HCI MSc Final Project, University College London
Sketchnote Timeline: Qualitative Study on The Temporal Sequence and Techniques when Creating Live Sketchnotes
- 06/2019 – 09/2019 Hing Yu Ng, HCI MSc Final Project, University College London
Eliciting User-defined Touch and Mid-air Gestures for Co-located Mobile Gaming
- 06/2019 – 09/2019 Yuqi Shao, HCI MSc Final Project, University College London
Using F-formation and Micro-mobility to Analyse Cross-device Design Collaboration
- 06/2019 – 09/2019 Yue Zhang, HCI MSc Final Project, University College London
Tangible Pop-up Book Interface for Playful Explorations of Electronics, Sensing and Actuation
- 06/2019 – 09/2019 Jim Neussl, HCI MSc Final Project, University College London
TactileImage: Low-Cost Design of an Interactive Shape Display
- 06/2018 – 09/2018 Harshna Patel, HCI MSc Final Project, University College London
An evaluation of feedforward based projected interactive floor markings in factory environments
- 06/2018 – 09/2018 Heyi Wen, HCI MSc Final Project, University College London
GameConstellation: Investigating Gestures and Game Board Design Patterns for Collaborative Cross-Device Board Games
- 06/2018 – 09/2018 Lorenzo Belluci, HCI MSc Final Project, University College London
DeviceTerritories: Investigating Gestural Interactions and Territoriality Use in Collaborative Cross-Device Workspaces
- 06/2018 – 09/2018 Marina Pardini, HCI MSc Final Project, University College London
To Play or Not to Play: Evaluating the Effectiveness of Playful Designs in Pedestrian Guidance
- 06/2018 – 09/2018 Rajen Bedia, HCI MSc Final Project, University College London
MuseumHalo: An evaluation of visual guidance through interactive flooring for facilitating the redirection of attention
- 06/2018 – 09/2018 Raluca-Ioana Vacaru, HCI MSc Final Project, University College London
CodeConstellations: Reimagining the Web Development Experience Using Cross-Device Interaction
- 06/2018 – 09/2018 Raya Sharbain, HCI MSc Final Project, University College London
LiveConstellations: A Modular Platform for Live Music Mixing Performances
- 06/2018 – 09/2018 Ruyi Fu, HCI MSc Final Project, University College London
Stop and Go: Using Dynamic Projected Floor Patterns to Encourage Moving or Stopping Behaviour

- 06/2017 – 09/2017 Xiaodi Zhong, HCI MSc Final Project, University College London
How to direct people's attention and promote interactions? A crowdsourcing study of the visual patterns on interactive floors
- 06/2017 – 09/2017 Wanyu Fu, HCI MSc Final Project, University College London
A crowdsourced evaluation of dynamic visual markings on an interactive floor helping wayfinding in transport hubs
- 06/2017 – 09/2017 Ryan Horgan, HCI MSc Final Project, University College London
FutureRail: Designing UbiComp displays for train carriage capacity and examining boarding behaviours
- 06/2017 – 09/2017 Wenyu Zhang, HCI MSc Final Project, University College London
EagleViewQuery: Video Analysis and Querying Tool for Analysing Collaborative Interactions in Tracked Environments
- 06/2017 – 09/2017 Suppachai Suwanwatcharachai, HCI MSc Final Project, University College London
EagleView: Design of People and Devices Visualizations for Analysing Interactions in Tracked Space.
Published as full paper at ACM ISS 2018.
- 06/2017 – 09/2017 Sze Nga Ho, HCI MSc Final Project, University College London
ConnectUs: Designing Engaging Activities for Children and their Parents to Explore Internet of Things
- 06/2016 – 09/2017 Elise Hein, HCI MSc Final Project, University College London
Google-Driven Development: A Situated Study of Web Use in Programming
- 06/2016 – 09/2016 Isabel Benavente Rodríguez, HCI MSc Final Project, University College London
Gesture Elicitation Study on How to Opt-in & Opt-out from Interactions with Large Public Displays
Published as full paper at ACM ISS 2017.
- 06/2016 – 09/2016 Jordi Casanueva David, HCI MSc Final Project, University College London
Data Sculpture for the Quantified Self – A study into physical ambient data visualisation and time-based activity tracking
- 06/2016 – 09/2016 Joshua Kevin Budiman, HCI MSc Final Project, University College London
Voyageur: Investigating Overviews in Collaborative Sensemaking
Published as full paper at CHI 2018
- 06/2016 – 09/2016 Jennifer Sheahan, HCI MSc Final Project, University College London
Won't somebody please think of the parents? Designing activities for engagement with STEM learning.
- 06/2016 – 09/2016 Victor Armas, HCI MSc Final Project, University College London
Exploring the potential of a re-programmable remote control for IoT devices in a home environment.
- 08/2015 – 09/2016 Chi-Jui Wu, CS ML MSc Final Project, University College London
EagleSense: Real-Time Human Posture and Activity Recognition for Interactive Spaces using Top-View Depth-Sensing Cameras
- 06/2015 – 09/2015 Sandeep Zechariah George, HCI MSc Final Project, University College London
Design of high-resolution, low-cost tactile shape displays
- 06/2015 – 09/2015 Mohamad Fadhli bin Ismail, CS MSc Final Project, University College London
Smart watch interaction with IoT
- 06/2015 – 09/2015 Shing Yau Lau, CS MSc Final Project, University College London
Sensing platform for smart watch gestural interaction
- 09/2014 – 04/2015 Kelvin Khoo Kuok Yao, CS MEng final year project, University College London
Interactive Tactile Images for Blind Children

- 05/2014 – 08/2014 Steven Houben, summer research internship, University College London
Prototyping toolkit for cross-device smart-watch applications
- 06/2014 – 09/2014 Dominic Hey, HCI MSc Final Project, University College London
Interactive Tactile Images for Blind Children
- 06/2014 – 09/2014 Julian Garcia Camacho, HCI MSc Final Project, University College London
Wizard-of-Oz Prototyping in the Wild
- 06/2014 – 09/2014 Maria Basia, HCI MSc Final Project, University College London
Sound perception experiments
(student's work was published at CHI and won honourable mention award)
- 09/2013 – 05/2014 Stephanie Georgiou, CS BSc Final Project, University College London
Interactive Displays for the Visually Impaired
- 09/2013 – 05/2014 Aizhan Demeugaliyeva, CS BSc Final Project, University College London
Run-time engine for multi-modal tactile displays
- 05/2012 – 08/2012 Martin Weigel, summer research internship, University of Calgary
Proxemic interactions with mobile projectors, in submission
Co-supervised with Saul Greenberg and Juergen Steimle, MIT
- 09/2010 – 05/2012 Anthony Xiang, B.Sc. thesis, University of Calgary
Body-centric interactions, published at ACM MobileHCI '12.
Co-supervised with Saul Greenberg
- 05/2011 – 08/2011 David Ledo, NSERC summer project, University of Calgary
The TouchID toolkit, published at ACM ITS '11. Co-supervised with Saul Greenberg
- 06/2010 – 04/2011 Till Ballendat, Diplom thesis, University of Calgary
Visualization of and interaction with digital devices as a function of proximity, published at
ACM ITS '12. Co-supervised with Saul Greenberg and Andreas Butz, Ludwig Maximilians
University Munich
- 06/2010 – 04/2011 Johannes Kiemer, Diplom thesis, University of Calgary
Fiduciary-tagged glove toolkit, published at ACM ITS '10 and ACM ITS '11
Co-supervised with Saul Greenberg
- 05/2010 – 04/2011 David Ledo, NSERC summer project and CPSC 503, University of Calgary
The haptic tabletop puck API, published at ACM TEI '12.
Co-supervised with Saul Greenberg
- 09/2009 – 03/2010 Till Ballendat, graduate research project, University of Calgary
Proxemic media player, published at ACM ITS '10. Co-supervised with Saul Greenberg

EXTERNAL EXAMINER

- [E.14] University of Bristol, UK.
External examiner for PhD defence of Luluah Albarrak.
Supervisor: Anne Roudaut, Oussama Metatla. June 2022
- [E.13] University of Waterloo, Canada.
External examiner for PhD defence of Leila Homaeian.
Supervisor: Stacey D. Scott, James R. Wallace. March 2022
- [E.12] University of Halifax, Canada.
External examiner for PhD defence of Mohammed Alnusayri.
Supervisor: Derek Reilly. August 2021

- [E.10] Lancaster University, UK.
External examiner for PhD defence of James Devine.
Supervisor: Joe Finney. August 2020.
- [E.9] University of Waterloo, Canada.
External examiner for PhD defence of Hemant Surale.
Supervisor: Daniel Vogel. April 2020.
- [E.8] University Paris Sud (France):
External examiner for PhD defence of Philip Tchernavskij
Supervisor: Michel Beaudouin-Lafon. December 2019
- [E.7] Tampere University of Technology:
Pre-examiner for PhD defence of Tero Jokela
Second pre-examiner: Fabio Paterno, Supervisor: Kaisa Väänänen. October 2018
- [E.6] University Paris Sud (France):
External examiner for PhD defence of German Leiva. Committee: Jean-Daniel Fekete,
Nicolai Marquardt. Supervisor: Michel Beaudouin-Lafon. December 2018
- [E.5] Universität Stuttgart (Germany):
External examiner for PhD defence of Lars Michael Lischke. Committee: Morten Fjeld,
Nicolai Marquardt. Supervisor: Albrecht Schmidt. October 2018
- [E.4] University of Lancaster (UK):
External examiner for PhD defence of Miriam Sturdee
Committee: Hans Gellersen, Nicolai Marquardt. March 2018
- [E.3] University Paris Sud (France):
External examiner for PhD defence of Can Liu
Thesis committee: Olivier Chapuis, Michel Beaudouin-Lafon. December 2015
- [E.2] University of Lancaster (UK):
External examiner for PhD defence of Yanxia Zhang
Thesis committee: Hans Gellersen, Walterio Mayol-Cuevas. November 2015
- [E.1] Hasselt University Belgium (Belgium):
External examiner for PhD defence of Jo Vermeulen.
Thesis committee: Kris Luyten, Karin Coninx. December 2014

INTERNAL EXAMINER (UCL)

- [IE.2] University College London, Examiner for PhD defence of Marta Cecchinato
Supervisor: Anna Cox. May 2018
- [IE.1] University College London, Examiner for PhD defence of Giulia Barbareschi
Supervisor: Catherine Holloway. March 2018

OTHER EXAMINATIONS:

CANDIDACY, FIRST YEAR VIVA, TRANSFER VIVA

- [OE.16] Mohamed Abd El Ghani, first year viva, University College London, March 2022
- [OE.15] Priscilla Wong, first year viva, University College London, April 2021
- [OE.14] Middlesex University, UK. External examiner for MSc by Research degree of Eva Onyeulo.
Supervisor: Kai Xu. April 2021.
- [OE.13] Panagiotis Florous, first year viva, University College London, March 2021

- [OE.12] Kate Burton, first year viva, University College London, December 2020
- [OE.11] Pat Zhang, first year viva, University College London, August 2019
- [OE.10] Roxana Ramirez Herrera, transfer/upgrade viva, University College London, June 2018
- [OE.9] Nora Ptakauskaite, transfer/upgrade viva, University College London, August 2018
- [OE.8] Nora Ptakauskaite, first year viva, University College London, January 2018
- [OE.7] Maryam Banduka, first year viva, University College London, August 2018
- [OE.6] Britta Schulte, transfer viva, University College London, March 2017
- [OE.5] University Paris Sud (France): Upgrade Viva for German Leiva, July 2017
- [OE.4] Britta Schulte, first year viva, University College London, August 2016
- [OE.3] Joseph W. Newbold, first year viva, University College London, July 2015
- [OE.2] Aneesha Singh, transfer viva, University College London, September 2014
- [OE.1] Mara Balestini, first year viva, University College London, November 2013

OUTREACH

- Since 2015 *Magic Cubes in Primary and Secondary Schools:*
As part of the projects CodeMe, MakeMe, and Magic Cubes we have worked with 9+ primary and secondary schools across London and the South of England to deliver Internet of Things and programming classes to students in line with the national curriculum. The schools have included state-funded, independent, mainstream, and special education needs schools (reaching >1500 people: children, parents, and teachers).
- 10/2018 *Science Museum Year of Engineering*
Workshops over 2 days with the *Magic Cubes* at the Science Museum Year of Engineering to a wide audience of children and families;
reached > 250 members of the public.
- 01/2018 *Emirates Digital Celebration at Emirates Stadium.*
Engaged London teachers and educators with the *Magic Cubes* (organized by co-supervised PhD student).
- 11/2017 *Big Bang Launch at the Natural History Museum.*
Engaged educators of the Greater London area with the *Magic Cubes* (organized by co-supervised PhD student).
- 10/2017 *Making Magic with the Magic Cubes (MozFest 2017)*
Drop-in session, open to children and adults, to teach introductory programming with Arduino and Magic Cubes; ~30 people.
- 06/2017 *It's All Academic Festival*
Engaged University of London alumni with the Magic Cubes research project (co-organized, session run by co-supervised PhD student).
- 05/2017 *Bringing the Magic Cubes to special education schools*
Educational sessions with Magic Cubes at two special education needs schools in Southern England (~20 students).
- 11/2016 *Hackney University Extension Coding Masterclass*
PhD student prepared and delivered a coding class to sixth form students (with ~30 students).

- 10/2016 *Hands-on Exploration of Issues with the IoT (MozFest, 2016)*
Session to critically engage the public with IoT data privacy (~10 people).
- 09/2016 *Newnham Collegiate School Induction Day*
Session on *Magic Cubes* and low-fidelity prototyping methods (~15 students).
- 06/2016 *Interaction Design and Children conference BBC day*
Demo session to engage child-computer interaction researchers with the *Magic Cubes*.
- 04/2016 *Royal Institution Masterclass: Engineers Save Lives*
3-hour coding session for Year 9 students with MakeMe/CodeMe (~30 students).
- 11/2015 *Big Bang Fair 2015 – UCL*
CodeMe creative making and coding activities.
Facilitated programming activities with a wide range of students.
- 05/2015 *UCL Computer Science outreach event*
CodeMe creative making and coding activities.
- 03/2015 *Science Museum “Human Enhancement Exhibit”*
Demonstration of sonic shoes (4-days exhibit).
- 03/2015 *Royal Institution Master Class in Computer Science*
“Sensing your body”, 3-hours session with activities around human-computer interaction and physical computing.

MEDIA COVERAGE OF RESEARCH PROJECTS

- [M.34] SlashGear, article by Shane McGlaun. October 12, 2021. Air Constellations shows new ways for multiple devices to work together. <https://www.slashgear.com/air-constellations-shows-new-ways-for-multiple-devices-to-work-together-12694822/>
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 Computer World, Network World, IT World, CIO
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UNIVERSITY LEADERSHIP ROLES

- 10/2015 – 12/2022 MSc Project Coordinator, HCI MSc program,
 UCL Interaction Centre
- 09/2017 – 08/2019 Deputy Departmental Tutor, Director of Studies,
 Department of Computer Science, UCL
- 02/2014 – 08/2017 Computer Science Space Planning Group,
 Department of Computer Science, UCL.
 Planning move of part of the department to new building in Gower Street 66-72 and the overall strategy for teaching, research, lab, and office spaces in the department.
- 01/2004 – 05/2008 Member of the university elections committee and member of the committee for research and science (Bauhaus-University Weimar)
- 06/2002 – 06/2005 Executive board member of the students' association at the Faculty of Media, the council at the Faculty of Media, and board of examiners Media Systems (Bauhaus-University Weimar)

- 06/2002 – 06/2005 Evaluation committee member at the entrepreneur centre (Bauhaus-University Weimar)
- 06/2003 – 06/2005 Member of the finance committee, academic committee, and technology infrastructure committee of the senate (Bauhaus-University Weimar)
- 06/2003 – 06/2004 Member of university senate (Bauhaus-University Weimar)

VOLUNTEERING AND RESEARCH COMMUNITY

Since 2009 Conference Committee member:

ACM UIST 2021 Student Innovation Contest Co-Chair
 ACM ISS 2020 Co-Chair of Editorial Board PACM ACM ISS
 ACM CHI 2020 Sub-Committee Co-Chair ITDM
 ACM CHI 2019 Sub-Committee Co-Chair ITDM
 ACM ISS 2016 Conference Co-Chair
 ACM TEI 2016 Graduate Student Consortium Co-Chair
 ACM UIST 2015 Demo Co-Chair
 ACM ITS 2015 Workshops and Tutorials Co-Chair
 ACM MobileHCI Demo Co-Chair
 IEEE Mobiquitous 2014 Local Co-Chair
 ACM UIST 2014 Demo Co-Chair
 ACM ITS 2014 Workshops, Studios, Tutorials Co-Chair
 ACM UIST 2013 Student Innovation Contest Co-Chair
 ACM MobileHCI 2013 E-publications Co-Chair
 ACM TEI 2009 web chair
 ACM CHI 2009 Student Volunteer Co-Chair
 ACM CHI 2008 Student Volunteer Co-Chair

Since 2011 Program Committee and Associate Chair:

ACM UIST 2023 papers
 ACM CHI 2022 papers
 ACM UIST 2021 papers
 ACM CHI 2018 papers
 ACM ISS 2017 papers
 ACM CHI 2017 demos
 ACM EICS 2016 papers
 ACM DIS 2016 papers
 ACM CHI 2015 papers
 ACM ITS 2015 papers
 ACM TEI 2015 papers
 ACM MobileHCI 2015 papers
 ACM CHI 2014 papers
 ACM DIS 2014 papers
 ACM PerDis 2014 papers
 ACM ITS 2014 papers
 ACM ITS 2014 posters extended abstracts
 ACM UIST 2013 papers
 ACM CHI 2013 Work-in-progress
 Pervasive 2011 papers

Since 2008 **Reviewer:**

ACM CHI 2008 - 2023
 ACM ISS/ITS 2009 - 2023
 ACM TEI 2008 - 2021
 ACM UIST 2008 - 2023

ACM MobileHCI 2012, 2014 – 2017, 2020, 2021
ACM CHI Play 2017 - 2019
ACM CSCW 2016, 2020
ACM UbiComp 2011, 2014, 2016
ACM IMWUT 2019, 2020
ACM SIGGRAPH 2019
ACM EICS 2011, 2016, 2018
ACM DIS 2012, 2014, 2016, 2018, 2022
Others: NordiCHI 2012, INTERACT 2011 and 2015,
ICMI 2015, GI 2015, MUM 2013, InfoVis 2014, 2015
Journals: ToCHI, TVCJ, TVCG, JCSCW
IEEE Pervasive computing 2017, 2021

2004 – 2011 Student volunteer:
ACM CHI 2004, CHI 2006, CSCW 2006, ITS 2010, UIST 2011

LANGUAGE SKILLS

ENGLISH Fluent
GERMAN Fluent

PROFESSIONAL MEMBERSHIPS AND AFFILIATIONS

ACM (Association for Computing Machinery)
IEEE (Institute of Electrical and Electronic Engineers)
FHEA (Fellow of the Higher Education Academy)