Janet G. Johnson

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Education

University of California, San Diego — *La Jolla, CA, USA*

PhD in Computer Science (MS-PhD Transfer in 2018) / Human Computer Interaction, 3.82/4 — *Sept. 2016 - PRESENT*

Manipal Institute of Technology, Manipal University — *Manipal, India*

B.E. in Computer Science and Engineering, 8.79/10 — *Jul. 2010 - Jun. 2014*

Research Experience

Human Centered and Ubiquitous Computing Lab, UC San Diego — *La Jolla, CA, USA*

Graduate Researcher (Also associated with The Design Lab) — *Apr. 2017 - PRESENT*

- Studying remote synchronous collaboration in mixed and virtual reality environments.
- Designing an extended reality environment for casualty care with a focus on collaborative remote surgery.
- Aided the design of a mixed fidelity prototyping and authoring tool in mixed reality that exploits situated sketching.
- Employed longitudinal experience journals, interviews, and co-design sessions to uncover latent family member needs at an ICU.
- Employed design ethnography to understand the communication and interaction patterns in an ICU.
- Co-designed and evaluated HoloCPR, a mixed reality application that provides real-time resuscitation (CPR) aid for novices.

Medical XR, XR Safety Initiative — *Remote*

Researcher — *June. 2021 - PRESENT*

- Conducting research towards creating guidelines for safe and ethical XR solutions in healthcare.

Family Medicine and Public Health, UC San Diego — *La Jolla, CA, USA*

UX Researcher — *Nov. 2017 - Aug. 2018*

- Uncovered needs and designed a mobile intervention to improve patient-centered communication in primary care.

Connected and Open Research Ethics (CORE), UC San Diego — *La Jolla, CA, USA*

Graduate Collaboratory Fellow (UX Research) — *Oct. 2016 - Jan. 2018*

- Responsible for user research and usability testing for the CORE website.
- Understanding the trends of Mobile, Imaging, Sensing, Social, and Tracking research based on IRB forum posts.

School of Medical Science and Technology, Indian Institute of Technology — *Kharagpur (IIT-KGP), India*

Research Intern — *Jun. 2013 - Jul. 2013*

- Segmented Magnetic Resonance Images (MRI) to enable brain tumor detection and isolation.
- Employed rough set filtering, edge detection and unsupervised clustering.
- Successfully isolated tumor(s) in MR Images with 78% accuracy.

Professional Experience

Facebook, Inc — *Seattle, WA, USA*

UX Research Intern, Facebook Reality Labs — *Jun. 2020 - Sept. 2020*

- Conducted research to help define future AR technology.

Facebook UK Limited — *London, UK*

UX Research Intern, AR/VR — *Jun. 2019 - Sept. 2019*

- Conducted qualitative UX research on the Spark AR ecosystem to inform future directions.

PricewaterhouseCoopers & UC San Diego *La Jolla, CA, USA*

UX Research & Design Intern *Jun. 2017 - Sept. 2017*

- Responsible for the UX research and design of a collaborative mixed reality application to visualize and interact with population health insights that drive policy-making.

Microsoft India (R&D) Pvt. Ltd. *Hyderabad, India*

Software Engineer *Jul. 2014 - Jul. 2016*

- Designed an interface and developed angular components for an e-commerce site for Microsoft partners.
- Created a tool to identify stressed devices on the Microsoft Corporate Network, reducing the time from 6-8 hrs to approx. 6 minutes.
- Helped formulate business-unit level budget plan, created vendor contracts, and tracked and managed data-center projects as part of a program management stint.

Juniper Networks India Pvt. Ltd. *Bangalore, India*

Engineering Intern *Jan. 2014 - Jun. 2014*

- Designed a framework to enhance the debugging capabilities of EX-Series Platform Forwarding Engine.
- Made additions to JUNOS to pull relevant information from the Routing Engine, PFE and chipset of the switch.
- Reduced time to obtain the above-mentioned information from 30 minutes and 18 seconds to 12.7 seconds.

Publications

- **Janet G. Johnson**, Danilo Gasques, Tommy Sharkey, Evan Schmitz, and Nadir Weibel. "Do You Really Need to Know Where "That" Is? Enhancing Support for Referencing in Collaborative Mixed Reality Environments", In Proceedings of the 2021 CHI Conference on Human Factors in Computing Systems.

- Danilo Gasques, **Janet G Johnson**, Tommy Sharkey, Yuanyuan Feng, Ru Wang, Zhuoqun Robin Xu, Enrique Zavala, Yifei Zhang, Wanze Xie, Xinming Zhang, Konrad Davis, Michael Yip, and Nadir Weibel. "ARTEMIS: A Collaborative Mixed-Reality System for Immersive Surgical Telementoring", In Proceedings of the 2021 CHI Conference on Human Factors in Computing Systems.

- Chen Chen, **Janet G Johnson**, Kemeberly Charles, Alice Lee, Ella T. Lifset, Michael Hogarth, Alison A. Moore, Emilia Farcas, and Nadir Weibel. "Understanding Barriers and Design Opportunities to Improve Healthcare and QOL for Older Adults through Voice Assistants", In Proceedings of ASSETS 2021, International ACM SIGACCESS Conference on Computers and Accessibility.

- W. Xie, Y. Liang, **J. Johnson**, A. Mower, S. Burns, C. Chelini, P. D'Alessandro, N. Weibel, and J.P. Schulze. "Interactive Multi-User 3D Visual Analytics in Augmented Reality", In Proceedings of IS&T International Symposium on Electronic Imaging 2020.

- Nadir Weibel, Danilo Gasques Rodrigues, **Janet G. Johnson**, Thomas Sharkey, Zhuoqun Xu, Xinming Zhang, Michael Yip, and Konrad Davis. "ARTEMIS: Mixed-Reality Environment for Immersive Surgial Telementoring", In Proceedings of the 2020 CHI Conference Extended Abstracts on Human Factors in Computing Systems.

- **Janet G. Johnson**, Khalil Mrini, Michael Hogarth, Alison Moore, Ndapa Nakashole, Nadir Weibel, and Emilia Farcas. "Voice-Based Conversational Agents for Older Adults", Position Paper at Conversational Agents for Health and Wellbeing, CHI 2020.

- K.L. Davis, D. Gasques, Y.Zhang, W. Xie, **J. Johnson**, Y. Feng, Z. Xu, J. Riback, T. Sharkey, M. Yip, N. Weibel. "ARTEMIS, Augmented Reality Technology to Enable reMote Integrated Surgery: A Review of Technical Consideration and Study Design", 2019 Military Health System Research Symposium (MHSRS 2019), Orlando Florida, August 2019.

- **Janet G. Johnson**, Evan Schmitz, Venktesh Ramnath, and Nadir Weibel. "Nurture-Empower-Support: A Human-Centered Approach to Understand and Support ICU Families", In Proceedings of The 13th EAI International Conference on Pervasive Computing Technologies for Healthcare, pp. 119-128. ACM, 2019.

- Thomas Sharkey, **Janet G. Johnson**, Danilo Gasques, and Nadir Weibel. "I Want to Be a Surgeon! Role Playing for Remote Surgery in Mixed Reality", In Proceedings of WISH 2019, Workshop on Interactive System for Healthcare, CHI 2019.

- Danilo Gasques Rodrigues, **Janet G. Johnson**, Thomas Sharkey, and Nadir Weibel. "PintAR: Sketching Spatial Experiences in Augmented Reality", In the Designing Interactive Systems Conference 2019 Companion, pp. 17-20. ACM, 2019.

- **Janet G. Johnson**, Evan Schmitz, Venktesh Ramnath, and Nadir Weibel. "Designing Family-Centered Aids for the ICU", In Proceedings of the 2019 CHI Conference Extended Abstracts on Human Factors in Computing Systems.

- Danilo Gasques Rodrigues, **Janet G. Johnson**, Thomas Sharkey, and Nadir Weibel. "What You Sketch Is What You Get: Quick and Easy Augmented Reality Prototyping with PintAR", In Proceedings of the 2019 CHI Conference Extended Abstracts on Human Factors in Computing Systems.

- **Johnson, Janet G.**, Danilo Gasques Rodrigues, Madhuri Gubbala, and Nadir Weibel. "HoloCPR: Designing and Evaluating a Mixed Reality Interface for Time-Critical Emergencies", In Proceedings of the 12th EAI International Conference on Pervasive Computing Technologies for Healthcare, pp. 67-76. ACM, 2018.

- Rodrigues, Danilo Gasques, **Janet G. Johnson**, and Nadir Weibel. "Real-time guidance for cardiopulmonary resuscitation in Mixed Reality", Pervasive Health 2018 (demo)

Teaching Experience

Towards Human-Centered AI, UC San Diego *La Jolla, CA, India*

Teaching Staff *2022*

- Co-designing a student-driven course on human-centered AI.

CSE 118/218 - Ubiquitous Computing, UC San Diego *La Jolla, CA, India*

Teaching Assistant *2017, 2018, & 2019*

- This course explores ubiquitous computing through both paper readings and a quarter-long project with a focus on mixed reality.
- Responsible for holding discussion sessions, some lectures, and mentoring teams on mixed reality projects.

CSE 190/291 - Human-Computer Interaction for Health (HCI4H), UC San Diego *La Jolla, CA, India*

Teaching Assistant *2019, 2021 & 2022*

- This course explores the challenges of designing and introducing new interactive and sensing technology to healthcare.
- Responsible for mentoring students, grading, and logistics of the course.

Interaction Design Specialization, Coursera *La Jolla, CA, India*

Teaching Staff *Sept. 2017 - Aug. 2019*

- This specialization teaches fundamentals for designing, implementing, and evaluating user interfaces.
- Managed the logistics and course material for the eight courses that make up the specialization.

COGS 160 - Advanced Interaction Design, UC San Diego *La Jolla, CA, India*

Teaching Assistant *Apr. 2017 - Jun. 2017*

- This course introduces social computing, interaction techniques and information design in a bi-weekly studio format.
- Helped conduct classes, held office hours, and was responsible for the grading and logistics of the class.

Honors and Responsibilities

Talks, Demos, and Presentations

2019	**Introduction to Augmented Reality**, Women in STEM, San Diego Science & Engineering Fair	*San Diego, CA, USA*
2018	**Mixed Reality and HCI Research**, Harvey Mudd Research Open House	*Claremont, CA, USA*
2017	**Video Games to the Rescue!**, Fleet Science Center	*San Diego, CA, USA*

Academic Service

2020 **Web Co-Chair**, ACM International Joint Conference on Pervasive and Ubiquitous Computing & International Symposium on Wearable Computers

Academic Peer Reviews

2022 **Papers**, CHI PLAY:Annual Symposium on Computer-Human Interaction in Play
2022 **Late Breaking Works**, CHI: Conference on Human Factors in Computing Systems
2022 **Papers**, CSCW: Conference on Computer Supported Cooperative Work and Social Computing
2022 **Papers**, IEEE VR:Conference on Virtual Reality and 3D User Interfaces
2022 **Papers**, MobileHCI: Conference on Mobile Human-Computer Interaction
2022 **Papers**, TEI:Conference on Tangible, Embedded and Embodied Interaction
2021 **Papers**, CHI: Conference on Human Factors in Computing Systems
2021 **Papers**, ISWC: International Symposium on Wearable Computers
2021 **Papers**, SUI:Symposium on Spatial User Interaction
2021 **Papers**, VRST:Symposium on Virtual Reality Software and Technology
2020 **Papers**, CHI: Conference on Human Factors in Computing Systems
2020 **Late Breaking Works**, CHI: Conference on Human Factors in Computing Systems
2018 **Late Breaking Works**, CHI: Conference on Human Factors in Computing Systems

Leadership Positions

2013 **Treasurer**, AAINA Dramatics, Manipal University's official dramatics club, Manipal, India
2013 **Category head, Hospitality**, Revels, MIT Manipal's national cultural festival, Manipal, India
2012 **Category head, Hospitality**, Techtatva, MIT Manipal's national technical festival, Manipal, India
2012 **Sponsorship Head**, AAINA Dramatics, Manipal, India
2012 **Assistant Director**, AAINA Dramatics, Manipal, India

Institutional Service

2019 **CSE Diversity, Equity, and Inclusion Committee Member (Current)**, UC San Diego, La Jolla, USA
2018 **Graduate Women in Computing Member (Current)**, UC San Diego, La Jolla, USA
2017 **MS Program Representative**, CSE, UC San Diego, La Jolla, USA
2014 **Organizing Committee Member & Host**, Microsoft's Build The Shield, Hyderabad, India
2011 **Set Designer**, AAINA Dramatics, Manipal, India
2013 **Management Committee Member**, Indian Society of Technical Education, Manipal, India

Outreach

2020 **California Wolf Center (Current)**, Julian, CA, USA
2012 **Volunteer Service Organization (VSO)**, Manipal, India
2008 **Dubai Cares**, Improving access to primary education in developing countries, Dubai, UAE