# BRENNAN JONES

Email: bdgjones@ucalgary.ca
Website: brennanjones.com

I am a PhD Candidate and Researcher in Human-Computer Interaction (HCI) and Computer Science, working to make a positive impact in the world through science and technology, and by bringing people together. My interests are in designing, building, and studying technologies that connect people across distances for work and play. I have training and skills as a computer scientist, developer, designer, researcher, writer, and communicator. I have designed, prototyped, and evaluated user experiences; conducted UX research using various methodologies; written and maintained software; and communicated ideas and research results through oral presentations, demonstrations, papers, posters, and videos. For fun, I enjoy hiking, cycling, travelling, photography, reading, pets, occasional video gaming, making up bad puns, and spending time with family and friends.

## EDUCATION

**PhD in Computer Science** 2017 - present
Research area: Human-Computer Interaction (HCI), Computer-Supported Cooperative Work (CSCW)
*University of Calgary*, Calgary, AB, Canada
GPA: 4.00/4.00
Supervisory committee: Dr. Ehud Sharlin, Dr. Carman Neustaedter (Simon Fraser University), Dr. Anthony Tang (University of Toronto)
Thesis topic: *Designing Remote-Collaboration Technologies for Serious Outdoor Activities*

**Visiting PhD Scholar** Apr. 2017 – Aug. 2018, Jan. 2019 - present
*Simon Fraser University School of Interactive Arts & Technology*, Surrey, BC, Canada
Advisor: Dr. Carman Neustaedter

**M.Sc. in Computer Science** 2014 - 2016
Research area: Human-Computer Interaction (HCI), Computer-Supported Cooperative Work (CSCW)
*University of Calgary*, Calgary, AB, Canada
GPA: 3.85/4.00
Thesis advisor: Dr. Anthony Tang
Thesis title: *Elevating Communication, Collaboration, and Shared Experiences between Peers in Mobile Video Communication using Drones*

**B.Sc. in Computer Science (with First-Class Honours)** 2011 - 2014
Concentration: Human-Computer Interaction (HCI)
*University of Calgary*, Calgary, AB, Canada
GPA: 3.75/4.00
Honours thesis title: *Improving Collaboration in Online Group Art Therapy*
Extracurricular activities: RezNet, UCalgaryCares

**Computer Science (University Transfer)** 2010 - 2011
*Mount Royal University*, Calgary, AB, Canada
GPA: 3.96/4.00
Extracurricular activities: Students in Free Enterprise (SIFE MRU)

## WORK EXPERIENCE

### *Current:*

**Graduate (MSc/PhD) Researcher** – Supervised by Dr. Anthony Tang & Dr. Ehud Sharlin Sep. 2014 - present
*University of Calgary Department of Computer Science – Interactions Lab (iLab)*, Calgary, AB, Canada
Worked on several research projects related to telepresence, video communication, remote collaboration robotics (e.g., telepresence robots, drones), and emergency response. Designed, implemented, and evaluated research prototypes; conducted experiments using various research methodologies; collaborated with other students, post-docs, and professors; written and published papers and posters at top-tier venues; presented and demoed at workshops and conferences; and helped other colleagues with their presentations and written work.

**PhD Researcher** – Supervised by Dr. Carman Neustaedter Apr. 2017 - Aug. 2018, Jan. 2019 - present
*Simon Fraser University School of Interactive Arts & Technology – Connections Lab (cLab)*, Surrey, BC, Canada
Working in collaboration with my PhD co-supervisor and other students in the lab on research related to telepresence and remote communication, collaboration, and social computing.

### *Past:*

**Research Intern** – Supervised by Dr. Sean Rintel Jul. 2019 - Sep. 2019
*Microsoft Research Cambridge – Human Experience & Design (HXD) Group*, Cambridge, England, UK
Worked on research exploring how to make meetings more 'socially intelligent' through machine perception, looking particularly at the user experience of remote video meetings.

**Research Intern** – Supervised by Ignacio Avellino, Dr. Cédric Fleury, Dr. Michel Beaudouin-Lafon, Dr. Joseph Malloch, & Dr. Wendy Mackay Apr. 2016 - Sep. 2016
*Inria Saclay – ExSitu Group*, Orsay, France
Worked on a research project involving the design, development, and evaluation of remote collaboration tools for people working in distributed workrooms with numerous workstations, devices, and a large wall-sized display. Our explorations involved the use of motion-capture systems (e.g., VICON), moving on-screen videos, and telepresence robots acting as physical surrogates for remote users.

**Teaching Assistant** – CPSC 481: Human-Computer Interaction I Sep. 2015 – Dec. 2015
*University of Calgary Department of Computer Science*, Calgary, AB, Canada
Assisted students with their project work; provided feedback on students' work; taught material not taught in lectures; taught programming and development in Microsoft Visual Studio and Expression Blend; prepared tutorial slides; evaluated students' work (portfolios, presentations, and assignment deliverables).

**Undergraduate Researcher** – Supervised by Dr. Anthony Tang Nov. 2012 – Aug. 2014

*University of Calgary Department of Computer Science – Interactions Lab (iLab)*, Calgary, AB, Canada

Worked on undergraduate research projects on remote group art therapy, physical and tangible gaming using Sphero robots, and camera work in mobile video communication.

**Web Developer Intern** Jul. 2012 - Nov. 2012

*E-Patches and Crests*, Sylvan Lake, AB, Canada

Assisted in developing and maintaining the company's website; helped implement an online checkout system for custom orders; and updated online newsletters and the website's main stylesheet. Wrote code using PHP, MySQL, HTML, and CSS.

**RezNet Technician** Sep. 2011 - Apr. 2012

*University of Calgary Residence Services*, Calgary, AB, Canada

Assisted students living in residence with connecting to the Internet and opening IT accounts; troubleshot network issues; and updated software on students' computers.

## PUBLICATIONS

**Peer-Reviewed Conference Papers:**

**Jones, B.**, Tang, A., and Neustaedter, C. (2020). Remote Communication in Wilderness Search and Rescue: Implications for the Design of Emergency Distributed-Collaboration Tools for Network-Sparse Environments. In *Proceedings of the ACM on Human-Computer Interaction, 4 (GROUP)*, ACM.

Yang, L., **Jones, B.**, Neustaedter, C., and Singhal, S. (2018). Shopping Over Distance through a Telepresence Robot. In *Proceedings of the ACM on Human-Computer Interaction, 2 (CSCW)*, ACM. (Acceptance rate: 25.5% - 184/722)

Heshmat, Y., **Jones, B.**, Xiong, X., Neustaedter, C., Tang, A., Riecke, B.E., and Yang, L. (2018). Geocaching with a Beam: Shared Outdoor Activities through a Telepresence Robot with 360 Degree Viewing. In *Proceedings of the 2018 ACM Conference on Human Factors in Computing Systems (CHI 2018)*, ACM. (Acceptance rate: 25.7% - 666/2592)

Neustaedter, C., **Jones, B.**, O'Hara, K., and Sellen, A. (2018). The Benefits and Challenges of Video Calling for Emergency Situations. In *Proceedings of the 2018 ACM Conference on Human Factors in Computing Systems (CHI 2018)*, ACM. (Acceptance rate: 25.7% - 666/2592) - **Honourable Mention Award (top 5% of all submissions)**

**Jones, B.**, Dillman, K., Tang, R., Tang, A., Sharlin, E., Oehlberg, L., Neustaedter, C., and Bateman, S. (2016). Elevating Communication, Collaboration, and Shared Experiences in Mobile Video through Drones. In *Proceedings of the 2016 ACM Conference on Designing Interactive Systems (DIS 2016)*, ACM, 1123-1135. (Acceptance rate: 26% - 107/418)

**Jones, B.**, Witcraft, A., Bateman, S., Neustaedter, C., and Tang, A. (2015). Mechanics of Camera Work in Mobile Video Collaboration. In *Proceedings of the 2015 ACM Conference on Human Factors in Computing Systems (CHI 2015)*, ACM, 957-966. (Acceptance rate: 23% - 486/2120)

**Peer-Reviewed Extended Abstracts and Posters:**

**Jones, B.**, Zhang, Y., Wong, P.N.Y., and Rintel, S. (2020). VROOM: Virtual Robot Overlay for Online Meetings. In *Extended Abstracts of the 2020 ACM Conference on Human Factors in Computing Systems (CHI 2020)*, ACM. (Acceptance rate: 41.8% - 323/772)

**Jones, B.**, Tang, A., Neustaedter, C., Antle, A.N., and McLaren, E.S. (2018). Designing a Tangible Interface for Manager Awareness in Wilderness Search and Rescue. In *Companion of the 2018 ACM Conference on Computer Supported Cooperative Work and Social Computing (CSCW 2018)*, ACM, 161-164. (Acceptance rate: 28% - 1847/6682)

**Jones, B.**, Dillman, K., Manesh, S.A., Sharlin, E., and Tang, A. (2014). Designing an Immersive and Entertaining Pervasive Gameplay Experience with Spheros as Game and Interface Elements. In *Proceedings of the 2014 ACM SIGCHI Annual Symposium on Computer-Human Interaction in Play (CHI PLAY 2014)*, ACM, 425-426. (Acceptance rate: 30% - 233/778)

**Jones, B.**, Hankinson, S.P., Collie, K., and Tang, A. (2014). Supporting Non-Verbal Visual Communication in Online Group Art Therapy. In *Extended Abstracts of the 2014 ACM Conference on Human Factors in Computing Systems (CHI 2014)*, ACM, 1759-1764. (Acceptance rate: 31% - 1000/3200)

**Workshop Papers:**

**Jones, B.**, Zhang, Y., Wong, P.N.Y., Rintel, S., and Heshmat, Y. (2020). VR-Enabled Telepresence as a Bridge for People, Environments, and Experiences. In *Social VR: A New Medium for Remote Communication and Collaboration (Workshop at CHI 2020)*.

Zhang, Y. and **Jones, B.** (2020). Virtual Reality for Telecommuting. In *Social VR: A New Medium for Remote Communication and Collaboration (Workshop at CHI 2020)*.

Heshmat, Y., **Jones, B.**, and Neustaedter, C. (2020). 360° View for Sharing Geocaching Experience with a Telepresence Robot. In *Social VR: A New Medium for Remote Communication and Collaboration (Workshop at CHI 2020)*.

**Jones, B.**, Tang, A., and Neustaedter, C. (2019). Drones for Remote Collaboration in Wilderness Search and Rescue. In *iHDI: International workshop on Human-Drone Interaction - Workshop at CHI 2019*.

**Jones, B.**, Tang, A., and Neustaedter, C. (2018). Designing Outdoor Remote-Communication Tools for Serious Collaborative Activities. In *HCI Outdoors: A CHI 2018 Workshop on Understanding Human-Computer Interaction in the Outdoors*.

**Jones, B.**, and Tang, A. (2015). Improving Collaboration and Shared Experiences in Out-and-About Mobile Video Conferencing. In *Everyday Telepresence: Emerging Practices and Future Research (CHI '15 Workshop)*.

**Doctoral Consortium:**

**Jones, B.** (2018). Designing for Distributed Collaboration in Wilderness Search and Rescue. In *Companion of the 2018 ACM Conference on Computer Supported Cooperative Work and Social Computing (CSCW 2018; Doctoral Colloquium)*, ACM, 77-80.

**Book Chapters:**

**Jones, B.**, Tang, A., and Neustaedter, C. (2020). Designing Technology for Shared Communication and Awareness in Wilderness Search and Rescue. To appear in McCrickard, S., Jones, M., and Stelter, T. (Eds.), *HCI Outdoors: Theory, Design, Methods and Applications*, Springer.

Neustaedter, C., Heshmat, Y., **Jones, B.**, Forghani, A., and Xiong, X. (2020). Shared Family Experiences over Distance in the Outdoors. To appear in McCrickard, S., Jones, M., and Stelter, T. (Eds.), *HCI Outdoors: Theory, Design, Methods and Applications*, Springer.

Hankinson, S.P., **Jones, B.**, and Collie, K. (2017). Adapting Art Therapy for Online Groups. In Brooke, S.L. (Ed.), *Combining the Creative Therapies with Technology: Using Social Media and Online Counseling to Treat Clients*, Charles C. Thomas Publisher Ltd.

**Technical Reports:**

Neustaedter, C., **Jones, B.**, O'Hara, K., and Sellen, A. (2017). An Analysis of Next Generation 9-1-1: Video Calling for Emergency Situations. *Connections Lab Technical Report 2017-0605-01*, Simon Fraser University.

**Theses:**

**Jones, B** (2016). Elevating Communication, Collaboration, and Shared Experiences between Peers in Mobile Video Communication using Drones. *MSc Thesis*, University of Calgary.

**Jones, B** (2014). Improving Collaboration in Online Group Art Therapy. *BSc Hons Thesis*, University of Calgary.

## TALKS AND PRESENTATIONS

**VR-Enabled Telepresence as a Bridge for People, Environments, and Experiences** Apr. 2020
*CHI 2020 Workshop Presentation*, Online/Virtual Workshop
Workshop: Social VR: A New Medium for Remote Communication and Collaboration

**Remote Communication in Wilderness Search and Rescue** Jan. 2020
*GROUP 2020 Paper Presentation*, Sanibel, FL, USA

**Designing for Remote Communication, Collaboration, and Telepresence in the Outdoors** Oct. 2019
*Invited Talk: Participatory Information Technology (PIT) Research Centre, Aarhus Universitet*, Aarhus, Denmark

**Designing for Remote Communication, Collaboration, and Telepresence in the Outdoors** Oct. 2019
*Invited Talk: ExSitu Group, Inria Saclay & Université Paris-Saclay*, Orsay, France

**Drones for Remote Collaboration in Wilderness Search and Rescue** May 2019
*CHI 2019 Workshop Presentation*, Glasgow, Scotland, UK
Workshop: iHDI: International workshop on Human-Drone Interaction

**Designing a Tangible Interface for Manager Awareness in Wilderness Search and Rescue** Nov. 2018
*CSCW 2018 Poster*, Jersey City, NJ, USA

**Designing for Distributed Collaboration in Wilderness Search and Rescue** Nov. 2018
*CSCW 2018 Doctoral Colloquium and Poster*, Jersey City, NJ, USA

**Designing Outdoor Remote-Communication Tools for Serious Collaborative Activities** Apr. 2018
*CHI 2018 Workshop Presentation*, Montréal, QC, Canada
Workshop: HCI Outdoors: A CHI 2018 Workshop on Understanding Human-Computer Interaction in the Outdoors

**Elev. Communication, Collaboration, and Shared Experiences in Mobile Video through Drones** Jun. 2016
*DIS 2016 Paper Presentation*, Brisbane, QLD, Australia

**Mechanics of Camera Work in Mobile Video Collaboration** Apr. 2015
*CHI 2015 Paper Presentation*, Seoul, South Korea

**Improving Collaboration and Shared Experiences in Out-and-About Mobile Video Conferencing** Apr. 2015
*CHI 2015 Workshop Presentation*, Seoul, South Korea
Workshop: Everyday Telepresence: Emerging Practices and Future Research Directions

**Designing an Immersive and Entertaining Pervasive Gameplay Experience with Spheros** Oct. 2014
*CHI PLAY 2014 Madness Presentation, Poster, and Demo*, Toronto, ON, Canada

**Designing an Immersive and Entertaining Pervasive Gameplay Experience with Spheros** Oct. 2014
*SurfNet 2014 Poster and Demo*, Calgary, AB, Canada

**Collaboration in Mobile Video Conferencing** Oct. 2014
*SurfNet 2014 Madness Presentation*, Calgary, AB, Canada

**Supporting Non-Verbal Visual Communication in Online Group Art Therapy** Apr. 2014
*CHI 2014 Poster*, Toronto, ON, Canada

**Non-Verbal Visual Communication in Online Art Therapy** Nov. 2013
*University of Calgary SU Undergraduate Research Symposium Poster*, Calgary, AB, Canada

## OTHER CONTRIBUTIONS

**Prototypes for Online Art Therapy Tools** Feb. 2019
*Digital International Creative Arts Therapies Symposium (DICATS)*, Online/Virtual Conference
*Presentation of work in collaboration with* Sara Prins Hankinson, Kate Collie, and Anthony Tang.
*Presented by* Sara Prins Hankinson. https://youtu.be/S9QMUHkLRWU

## COMMUNITY AND VOLUNTEER EXPERIENCE

**Conference and Journal Reviewer** – multiple occasions 2014 - present
*Conferences: CSCW 2020, RO-MAN 2020, DIS 2020, CHI 2020, GROUP 2020, UIST 2019, DIS 2019, CHI 2019, MobileHCI 2018, CSCW 2018, DIS 2018, CHI 2018, TEI 2018, ISS 2017, RO-MAN 2017, CHI 2017, CHI 2015*
*Journals: Intl' Journal of Human-Computer Studies (IJHCS), Journal on Multimodal User Interfaces (JMUI)*
Reviewed papers submitted to top international conferences and journals in the fields of Human-Computer Interaction (HCI), Computer-Supported Cooperative Work (CSCW), and Human-Robot Interaction (HRI).

**Program Committee (PC) Meeting Assistant** – multiple occasions 2019 - 2020

*ACM DIS Conference*

Assist Session Chairs and the Technical Chairs during the PC meeting for the ACM DIS conference.

**Associate Chair (AC)** – multiple occasions 2018 - 2020

*ACM CHI Conference, Late-Breaking-Work (LBW) Track*

Assign and manage reviewers for the LBW track for the ACM CHI conference.

**Student Volunteer** – multiple occasions 2014 - 2020

*Conferences: GROUP 2020, CHI 2019, CHI 2018, DIS 2016, CHI 2015, CHI PLAY 2014*

Assisted with tasks that kept the conferences running. Duties included (but were not limited to): telepresence assistance; workshop assistance; session monitoring; and assistance with demo and poster receptions.

**Telepresence Assistant** May 2019

*ACM CHI Conference 2019*

Assisted the telepresence chairs in providing opportunities to allow some attendees to attend and participate in conference and workshop activities remotely.

**Graduate College Scholar** Sep. 2018 - Dec. 2018

*University of Calgary Graduate College*

The College is a cohort of graduate students at the University of Calgary who strive to connect the university and city communities and promote discourse on important and challenging topics. As a member, I served on a subcommittee, helped organize events on and off campus, and volunteered in the community.

**Residence Move-In Volunteer** Sep. 2012 and Aug. 2015

*University of Calgary Residence Services*, Calgary, AB, Canada

Helped residence students move their belongings into their suites on Move-In Day.

**Volunteer** – multiple occasions Oct. 2011 – Aug. 2014

*University of Calgary Centre for Community-Engaged Learning*, Calgary, AB, Canada

Sample duties: helped build an elementary-school playground; helped sort clothing at the Mustard Seed; helped recruit for UCalgaryCares programs; helped sort flood-relief donations at the Siksika First Nation.

**Volunteer** Aug. 2013

*Alberta Flood Aid Benefit Concert*, Calgary, AB, Canada

Helped clean up the field; set up the VIP area; and directed parking.

**Flood Volunteer** Jun. 2013

*The City of* Calgary, Calgary, AB, Canada

Helped clean up homes in two separate neighbourhoods on two separate days after the June flooding in Calgary.

**Relay for Life Volunteer** – multiple occasions Jun. 2008 – Apr. 2013

*Canadian Cancer Society*, Strathmore, AB, Canada and Calgary, AB, Canada

Helped set up and run five Relay for Life events in Strathmore and at the University of Calgary.

**UCalgaryCares Costa Rica Volunteer** May 2012

*University of Calgary Centre for Community-Engaged Learning*, Isla Chira, Costa Rica.

Travelled with a group of other students to Costa Rica for two weeks to complete numerous volunteer projects for an elementary school and a lodge in a rural island community. The projects involved painting classrooms, sidewalks, fence posts, and bedrooms; repainting a basketball court; and building a bus stop.

**Web Developer** Sep. 2010 - Apr. 2011

*Students in Free Enterprise at Mount Royal University (SIFE MRU)*, Calgary, AB, Canada

Set up and maintained the organization's team wiki; assisted with the development of the organization's website.

## HONOURS AND AWARDS

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|---|---|
| **NSERC Postgraduate Doctoral Scholarship (PGS-D)** ($21,000/year) | 2018 - 2021 |
| **Alberta Innovates Graduate Student Scholarship** ($31,500/year)* | 2018 - 2020 |
| **U of C Eyes High Doctoral Recruitment Scholarship** ($25,000/year)* | 2017 - 2020 |
| **Alberta Graduate-Student Scholarship** ($3000) | 2016 |
| **U of C Computer Science Department Research Award** ($1500) | 2015 |
| **Alberta Innovates-Technology Futures Graduate Student Scholarship** ($26,500/year) | 2014 - 2016 |
| **NSERC Undergraduate Student Research Award (USRA)** ($6000 for 4 months) | 2014 |
| **Queen Elizabeth II Graduate Scholarship** ($10,800)† | 2014 |
| **U of C SU Undergraduate Research Symposium - GSA Award Honourable Mention** ($500) | 2013 |
| **NSERC Undergraduate Student Research Award (USRA)** ($5700 for 4 months) | 2013 |
| **Jason Lang Scholarship** ($1000) | 2012 and 2013 |
| **Louise McKinney Scholarship** ($2500) | 2011 |

## PRESS COVERAGE

**Microsoft Research (blog)** "VROOM: Giving body to telepresence" May 2020
https://aka.ms/AA8bj56

**Microsoft Vancouver (blog)** "Connection is everything" Feb. 2020
https://mcec.microsoft.ca/blog/connection-is-everything/

**CBC Spark (radio)** "It's a bird, it's a plane, it's...a drone video conferencing system!" Oct. 2015
http://www.cbc.ca/1.3270846

**CBC News (article)** "Drone study looks to revolutionize video-conferencing" Aug. 2015
http://www.cbc.ca/1.3209183

* Reduced to top-up.

† Awarded but not disbursed.

## SELECTED SKILLS AND QUALIFICATIONS

**Human-Computer Interaction:**

Prototyping, User Experience (UX) Design, UX Research, Lab Experiments, Field Studies, Observation Studies, Interview Studies, Participatory Design, Ethnography

**Computing Science:**

Computer Graphics, Algorithms, Computer Vision

**Programming languages, tools, platforms, and environments:**

Unity, JavaScript, Node.js, C#, .NET, Visual Studio, Expression Blend, Objective-C, Swift, iOS, PHP, MySQL, HTML, HTML 5, CSS, Java, C, C++, Python, Assembly

**Technologies:**

Mixed Reality (AR/VR) Development, Robotics Programming, Hardware Prototyping, 3D Printing, Physical Prototyping, Arduino, VICON Motion Capture, Microsoft Kinect

**Software Engineering:**

UML, Object-Oriented Design, Git

**Other:**

Teaching, Supervision, Technical Communication, Oral Communication, Photo Editing, Video Editing