cseweb.ucsd.edu/~cafraser

Ailie Fraser

cafraser@cs.ucsd.edu

EDUCATION

University of California, San Diego **April 2020**
PhD, Computer Science
Thesis: *Contextually Recommending Expert Help and Demonstrations to Improve Creativity*
Advisor: Scott Klemmer
Committee: Mira Dontcheva, Jim Hollan, Bill Griswold, Philip Guo, Björn Hartmann

University of California, San Diego **Dec 2016**
M.S., Computer Science
GPA: 3.77/4.0

University of Toronto, Victoria College **June 2013**
Honours B.Sc. with High Distinction, Specialist in Math & Computer Science, Major in Music
GPA: 3.94/4.0

RESEARCH POSITIONS

PhD Researcher, The Design Lab, UCSD **Oct 2014 – Mar 2020**
Worked under the supervision of Scott Klemmer:
- Explored techniques and building tools for supporting creativity by harvesting existing expert content and recommending relevant examples to people in the context of their work

Previously under the supervision of Nadir Weibel:
- Studied the processes of communication and uses of technology in radiation oncology, identified areas and proposed next steps for technological improvement

Creative Intelligence Lab Intern, Adobe Systems Inc. **Jun – Sept 2019**
Worked under the supervision of Mira Dontcheva:
- Studied techniques for improving navigation of creative live stream videos

Creative Intelligence Lab Intern, Adobe Systems Inc. **Jun – Sept 2017**
Worked under the supervision of Mira Dontcheva:
- Studied techniques for embedding expert software videos in the creative process

User Interface Research Intern, Autodesk Inc. **Jun – Sept 2016**
Worked under the supervision of Tovi Grossman:
- Studied team collaboration on physical tasks, developed and evaluated a system to improve task distribution and instruction display

Creative Technologies Lab Intern, Adobe Systems Inc. **Jun – Sept 2015**
Worked under the supervision of Mira Dontcheva and Holger Winnemöller:
- Developed and evaluated a suggestion tool to help novice users get started in complex software, in collaboration with Scott Klemmer at UCSD

PhD Researcher, Graphics and Vision group, UCSD **Jan – Mar 2015**
Worked under the supervision of Ravi Ramamoorthi:
- Studied interactive real-time BRDF editing, wrote a program to render objects under environment lighting and edit reflectance properties using interactive brushes

Research Assistant, DGP Lab, University of Toronto **Sept 2013 – May 2014**
Worked under the supervision of Kyros Kutulakos on a project in Computer Vision:
- Studied BRDF acquisition and visual texture analysis, extended existing “primal-dual coding” camera system to isolate light transport based on direction and distance of travel

Individual Research Project Course, University of Toronto **Sept – Dec 2012**
Worked under the supervision of Karen Reid:
- Evaluated benefits of a Python memory visualizer, added sorting-by-patterns functionality to the CRS used in introductory CS classes for real-time analysis of student submissions

PUBLICATIONS

C. Ailie Fraser, Joy Kim, Valentina Shin, Joel Brandt, and Mira Dontcheva. 2020. Temporal Segmentation of Creative Live Streams. To appear in *Proceedings of CHI '20*.

C. Ailie Fraser, Mira Dontcheva, Joy Kim, and Scott Klemmer. How Live Streaming Does (and Doesn't) Change Creative Practices. 2020. *interactions Jan/Feb 2020*.

C. Ailie Fraser, Joy Kim, Alison Thornsberry, Scott Klemmer, and Mira Dontcheva. 2019. Sharing the Studio: How Creative Livestreaming can Inspire, Educate, and Engage. *Proceedings of Creativity & Cognition '19*.

C. Ailie Fraser, Tricia J. Ngoon, Mira Dontcheva, and Scott Klemmer. 2019. RePlay: Contextually presenting learning videos across software applications. *Proceedings of CHI '19.*

Tricia J. Ngoon, **C. Ailie Fraser**, Ariel S. Weingarten, Mira Dontcheva, and Scott Klemmer. 2018. Interactive Guidance Techniques for Improving Creative Feedback. *Proceedings of CHI '18.* Honorable Mention.

C. Ailie Fraser, Tovi Grossman, and George Fitzmaurice. 2017. WeBuild: Automatically Distributing Assembly Tasks Among Collocated Workers to Improve Coordination. *Proceedings of CHI '17*.

C. Ailie Fraser, Mira Dontcheva, Holger Winnemöller, Sheryl Ehrlich, and Scott Klemmer. 2016. DiscoverySpace: Suggesting Actions in Complex Software. *Proceedings of DIS '16.*

Catherine M. Hicks, Vineet Pandey, **C. Ailie Fraser**, and Scott R. Klemmer. 2016. Framing Feedback: Choosing Review Environment Features that Support High Quality Peer Assessment. *Proceedings of CHI '16*.

EXTENDED ABSTRACTS

C. Ailie Fraser, Julia M. Markel, N. James Basa, Mira Dontcheva, and Scott Klemmer. 2019. ReMap: Multimodal Help-Seeking. *UIST '19 Adjunct.*

C. Ailie Fraser, Joy Kim, Scott Klemmer, and Mira Dontcheva. 2019. Creative livestreaming: How sharing one's process can inspire, educate, and engage. *CHI '19 Live Streaming Workshop*.

C. Ailie Fraser. 2018. The Right Content at the Right Time: Contextual Examples for Just-in-time Creative Learning. *UIST '18 Doctoral Symposium*.

C. Ailie Fraser, Mira Dontcheva, and Scott Klemmer. 2018. Software videos: Rich content and learning potential, but a challenge for sensemaking. *CHI '18 Sensemaking Workshop*.

C. Ailie Fraser, Tricia J. Ngoon, Ariel S. Weingarten, Mira Dontcheva, and Scott Klemmer. 2017. CritiqueKit: A Mixed-Initiative, Real-Time Interface For Improving Feedback. *UIST '17 Adjunct.*

C. Ailie Fraser, Mira Dontcheva, Holger Winnemöller, and Scott Klemmer. 2016. DiscoverySpace: Crowdsourced Suggestions Onboard Novices in Complex Software. *CSCW '16 Companion*.

Catherine M. Hicks, **C. Ailie Fraser**, Purvi Desai, and Scott Klemmer. 2015. Do numeric ratings impact peer reviewers? *Learning at Scale '15*.

Honours and Awards

Award for Excellence in Service/Leadership, CSE Department, UCSD — **June 2019**
NSERC Postgraduate Scholarship – Doctoral (PGS-D) — **Fall 2017 – Spring 2019**
Adobe Research Fellowship — **2017**
Award for Contributions to Diversity, CSE Department, UCSD — **June 2016**
Powell Fellowship, CSE Department, UCSD — **Fall 2014 – Spring 2017**

NSERC CGS-M offers from UBC and U of T (declined) — **April 2014**
Simeon Heman Janes Silver Medal — **Spring 2013**
Dean's List — **Spring 2010 – 2013**
Prof. William Kingston and Dr. John Kingston Scholarship — **Fall 2012**
University of Toronto Scholar — **Fall 2011**
Jessie Macpherson Memorial Scholarship — **Fall 2011**
William Pearson Scott Scholarship — **Fall 2010**
Mary Ellen Carty Residence Scholarship — **Fall 2009**

Teaching & Mentorship

Mentor, Early Research Scholars Program, UCSD — **Fall 2018 – Spring 2019**
Mentored two undergraduate students in the Computer Science & Engineering department on a research project.

Mentor, GradWIC Mentorship Program, CSE Department, UCSD — **Fall 2017 – Spring 2019**
Mentored three first-year graduate students in Computer Science & Engineering each year as part of the Graduate Women in Computing mentorship program.

Teaching Assistant, UCSD — **Fall 2015**
CSE 216 / COGS 230 – Interaction Design Research
Managed course website, met with & advised students, moderated discussions, and graded projects.

Teaching Assistant, University of Toronto — **Winters 2012, 2013**
CSC148 – Introduction to Computer Science
Ran weekly labs, graded exams and assignments, held office hours, and proctored exam.

Other Experience

Freelance Web Design & Development — **Feb 2018 – present**
Designed, built, and continue to manage website for Camp Wabikon (www.wabikon.com)

Web Developing Consultant — **Nov 2013 – May 2014**
Adapted a series of pitch recognition and memory tasks written in MATLAB to run online, as part of a study on music and language for the Rotman Research Institute at Baycrest

Casual Employee, University of Toronto — **June 2012 – April 2014**
Web design and content for the Faculty of Arts & Science's "FAStanswers" website for first-year students.

Service and Leadership

Organizing Committee, ACM UIST — **2020**
Co-publicity chair for UIST 2020 conference.

Organizing Committee, ACM Creativity & Cognition — **2019**
Co-website chair for Creativity & Cognition conference. Built & managed website: https://cc.acm.org/2019.

Website Lead, Diversity, Equity & Inclusion Committee, UCSD — **Fall 2017 – Winter 2020**
Member of department-wide committee in Computer Science and Engineering, composed of students, faculty, and staff dedicated to highlighting and expanding efforts to improve diversity. Manage content & design for DEI website as well as special event websites.

Graduate Women in Computing, UCSD — **Fall 2015 – Spring 2019**
Treasurer and Mentorship Committee member 2017-2019, President 2015-2017. GradWIC aims to increase awareness of diversity issues and foster an inclusive CSE community.

PhD Admissions Student Committee, UCSD **Fall 2017 – Spring 2019**
Co-leader of student committee for PhD admissions in the Computer Science and Engineering department.

The Beat, UCSD **Fall 2014 – Spring 2016**
Assistant Music Director 2015-2016, Section Leader 2014-2015. Directed, sang, and arranged music for The Beat, an award-winning acappella choir.

Member, Introductory Math and Science Committee **Fall 2012 – Spring 2013**
Faculty of Arts & Science, University of Toronto

COURSEWORK AND SKILLS

Computer Skills:

- HTML, Javascript, PHP, CSS, Swift, Python, MATLAB, C++, Java, C, SQL, OpenGL, OpenCV, Adobe Flash and Actionscript, Microsoft Office, Adobe Photoshop, LaTeX

Relevant Coursework:

- *Computer Science*: Research in HCI and Ubiquitous Computing, Information Visualization, Computer Graphics and Vision, Web Programming, Programming Languages, Object-Oriented and Systems Programming
- *Mathematics*: Mathematical Logic, Linear Algebra, Abstract Algebra, Calculus, Real and Complex Analysis