Ryan Louie

Contact Information

Northwestern University
Dept. of Computer Science and Communications
Delta Lab

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Education

Northwestern University, Evanston, IL — Sep 2017 - Jun 2023 (expected)
Pursuing Ph.D. in Technology Social Behavior
Advisor: Haoqi Zhang

Olin College of Engineering, Needham, MA
B.S., Engineering, Robotics, May 2017

Appointments

Delta Lab, Northwestern University, Evanston, IL
Graduate Student Researcher — Sep 2017 - Now

Google Brain, Magenta Mountain View, CA
Research Intern; hosted by Jesse Engel and Anna Huang — Jun - Sep 2021

Google Brain, People AI Research Mountain View, CA
Research Intern; hosted by Carrie J Cai — Jun - Sep 2019

Olin College Crowdsourcing and Machine Learning Lab, Needham, MA
Research Assistant; advised by Paul Ruvolo — Jun - Aug 2017

Uber ATC, Pittsburgh, PA
Software Engineer Intern — May - Aug 2016

Indico Enterprise AI, Boston, MA
Machine Learning Research Development Intern — Jun - Aug 2015

DuPont Pioneer, Boston, MA
Data Science Intern — May - Aug 2014

Awards & Honors

Recipient of Google PhD Fellowship in Human Computer Interaction, 2022.

Finalist for Meta PhD Research Fellowship in AR/VR Human Computer Interaction, 2022.

Design Research Fellow, Segal Design Research Cluster at Northwestern, Funding support from 2018 - 2019.

Honorable Mention, NSF Graduate Research Fellowship, 2017.

Grand Challenges Scholar, National Academy of Engineering Grand Challenges Scholars Program, 2017.

Olin Merit Scholarship, Half Tuition, Funding support from 2013 - 2017.

Papers in Submission

Ryan Louie, Kapil Garg, Darren Gergle, Haoqi Zhang. 2023. **Flexible Strategies for Structuring and Coordinating Opportunistic Social Interactions.** *Under Review at ACM CHI Conference on Human Factors in Computing Systems (CHI 2023)*

Paul Ruvolo, **Ryan Louie**, and Eric Jerman. 2023. **The Cane Game: An Educational Tool for Orientation and Mobility.** *Under Review at Case Studies of the ACM CHI Conference on Human Factors in Computing Systems (CHI 2023)*

Conference & Journal Papers

Ryan Louie, Darren Gergle, Haoqi Zhang. **Affinder: Expressing Concepts of Situations that Afford Activities using Context-Detectors.** In *Proceedings of ACM CHI Conference on Human Factors in Computing Systems (CHI 2022), 2022.*

Ryan Louie, Jesse Engel, Anna Huang. **Expressive Communication: Evaluating Developments in Generative Models and Steering Interfaces for Music Creation.** In *Proceedings of International Conference on Intelligent User Interfaces (IUI 2022), 2022.*

Ryan Louie, Kapil Garg, Jennie Werner, Allison Sun, Darren Gergle, Haoqi Zhang. **Opportunistic Collective Experiences: Identifying Shared Situations and Structuring Shared Activities at Distance.** In *Proceedings of ACM Human-Computer Interaction (CSCW 2020), 2020.*

Ryan Louie, Andy Coenen, Cheng Zhi Huang, Michael Terry, Carrie J Cai. **Novice-AI Music Co-Creation via AI-Steering Tools for Deep Generative Models.** In *Proceedings of ACM CHI Conference on Human Factors in Computing Systems (CHI 2020), 2020.*

Chris Yoon, **Ryan Louie**, Jeremy Ryan, MinhKhang Vu, Hyegi Bang, William Derksen, Paul Ruvolo. **Leveraging Augmented Reality to Create Apps for People with Visual Disabilities: A Case Study in Indoor Navigation.** In *The 21st International ACM SIGACCESS Conference on Computers and Accessibility (ASSETS 2019), 2019.* **Best Artifact Award**.

Workshop & Poster Papers

Ryan Louie, Jesse Engel, Anna Huang. **A Unified Evaluation of Expressive Generative Models and Steerable Interfaces for Music Creation.** In *GenAICHI Workshop at CHI 2022. May 2022.* [Workshop Info]

Nina Cong, Kevin Cheng, Haoqi Zhang, **Ryan Louie**. **Collective Narrative: Scaffolding Community Storytelling through Context-Awareness.** In *Companion Publication of the 2021 Conference on Computer Supported Cooperative Work and Social Computing (CSCW'21 Companion), 2021.*

Ryan Louie, Andy Coenen, Cheng Zhi Huang, Michael Terry, Carrie J Cai. **Cococo: AI-Steering Tools for Music Novices Co-Creating with Generative Models** In *IUI 2020 workshop on Human-AI Co-Creation with Generative Models. April 2020.*

Mentored Papers

Cindy Hu. **Self-Disclosure for Early Relationship Development through Situated Prompts in Opportunistic Collective Experiences.** In *Extended Abstracts of the ACM CHI Conference on Human Factors in Computing Systems (CHI 2022), 2022.* **2nd Place in Undergraduate Student Research Competition.**

Gabriel Caniglia. **Cast: A Context-Aware Collaborative Storytelling Platform.** In *Extended Abstracts of the ACM CHI Conference on Human Factors in Computing Systems (CHI 2020), 2020.*

Jennie Werner, Allison Sun. **Cerebro: A Platform for Opportunistic Collective Experiences.** In *Extended Abstracts ACM CHI Conference on Human Factors in Computing Systems (CHI 2018), 2018.* **2nd Place in Undergraduate Student Research Competition.**

Presentations

Affinder: Expressing Concepts of Situations that Afford Activites using Context-Detectors. In CHI 2022 conference session on AI: Design and Studies, May 2022.

Expressive Communication: Evaluating Developments in Generative Models and Steering Interfaces for Music Creation. In IUI 2022 conference, March 2022.

Empowering Novice Composers to Realize their Creative Goals using Generative Models. In Music + AI reading group at the Montreal Institute of Learning Algorithms (MILA) + Vector Institute, April 2022. [Talk]

Opportunistic Collective Experiences: Identifying Shared Situations and Structuring Shared Activities at Distance. In CSCW 2020 conference session on Coordination and Collaboration. October 2020. [Talk]

Novice-AI Music Co-Creation via AI-Steering Tools for Deep Generative Models. In CHI 2020 conference session on Sound and Musical Experiences. May 2020. [Talk, Session Info]

Cococo: AI-Steering Tools for Music Novices Co-Creating with Generative Models. In IUI 2020 workshop on Human-AI Co-Creation with Generative Models. April 2020. [Slides, Workshop Info]

Teaching Experience

Northwestern University, Evanston, IL USA

TA, CS315 Design Technology Research	Winter & Spring 2022
Project Mentor, CS315 Design Technology Research	Fall 2017 - Now
TA, CS314/COMM351 Technology Human Interaction	Winter 2021

Olin College of Engineering, Needham, MA USA

Teaching Assistant, ENGR3590 Computational Robotics	Spring 2017
Teaching Assistant, ENGR/MTH2199C Data Science	Spring 2015
Teaching Assistant, MTH2220 Linearity II	Fall 2014
Teaching Assistant, MTH2210 Linearity I	Spring 2014

Undergraduate & Masters Research Advising

Collective Narratives Richard Lam, Parveen Dhanoa, Jenny Chang, Nina Cong, Kevin Cheng, David Lee, Gabriel Caniglia, Sanfeng Wang, Gino Wang, and Eunice Lee Fall 2017 to present

- Advise research on "Collective Narratives: An API for Opportunistic Storytelling and Immersive Interactive Narratives"
- Work led to CHI 2020 Late Breaking Work on "Cast: A Context-Aware Collaborative Storytelling Platform."
- Work led to CSCW 2021 Late Breaking Work on "Collective Narrative: Scaffolding Community Storytelling through Context-Awareness."

Relationship Development through OCEs Cindy Hu, Victoria Tran, Grace Wainaina, Mason Lin, Zachary Cmiel, Amy Yang, Mary Truong, and Navin Gopaul Winter 2019 to present

- Advise research on "Relationship Development Through Opportunistic Collective Experiences."
- Work led to CHI 2022 Student Research Competition Paper on "Self-Disclosure for Early Relationship Development through Situated Prompts in Opportunistic Collective Experiences."

Cerebro Ryan Jeon, Matthew Wang, Suzy Lee, Allison Sun, and Jennie Werner Fall 2017 to Fall 2018

- Advise research on "Cerebro: Programming Opportunistic Interactions Across People"
- Work led to CHI 2018 Student Research Competition paper and 2nd place award.
- Work led to collaboration on ACM CSCW 2020 paper "Opportunistic Collective Experiences: Identifying Shared Situations and Structuring Shared Activities at Distance."

McGonagall Meg Grasse, Andrew Finke Fall 2017 to Fall 2018

- Co-mentored research on "McGonagall: Transfiguring Mixed-Fidelity Paper Prototypes to Remotely Test Mobile App Experiences"

Professional Activities

Program committee: IUI 2022 Workshop on Human-AI Co-Creation with Generative Models.

Reviewer: ACM Conference on Human Factors in Computing Systems (CHI) 2023; ACM Conference on Computer Supported Cooperative Work (CSCW) 2022; ACM Conference on Design of Interactive Systems (DIS) 2022.

Blog & Online Articles

Supporting Designers in Expressing Human Experiences to AI and Context-Aware Technologies, Northwestern Computer Science Website

HCI and ML: Putting People First, Google Magenta Team Website

R. Louie. Neural Image Captioning for Mortals. *indico Blog: Resources for exploring machine learning and data science*, 2015.

Patents / Prior Art

***Ryan Louie**, Nicole Rifkin, Brandon Rohrer.* **Method for quantifying crop health using overhead imagery.** *The IP.com Prior Art Database*, DuPont Pioneer, 2015.