Jasper Tran O'Leary

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Education

University of Washington
Ph.D. Computer Science and Engineering.
M.S. Computer Science and Engineering.
Advisor: Nadya Peek.
September 2017 to Present.
Expected graduation: June 2024.

University of California, Berkeley
B.A. Computer Science.
Mentors: Cesar Torres and Eric Paulos.
January 2013 to December 2016.

Research Experience

Graduate Research Assistant
Advisor: Nadya Peek, Human Centered Design and Engineering.
September 2017 to Present.
University of Washington. Seattle, WA.

Adobe Research Intern
Mentors: Holger Winnemöller, Wilmot Li, Morgan Dixon, and Mira Dontcheva.
February 2018 to September 2018.
Adobe Research. Seattle, WA.

Undergraduate Research Assistant
Mentors: Cesar Torres and Eric Paulos, EECS.
September 2013 to December 2016.
University of California, Berkeley. Berkeley, CA.

Publications

Conference Papers

Improving Programming for Exploratory Digital Fabrication with Inline Machine Control and StyledToolpath Visualizations
Jasper Tran O'Leary, Eunice Jun, Nadya Peek
SCF '22: ACM Symposium on Computational Fabrication

Taxon: a Language for Formal Reasoning with Digital Fabrication Machines
Jasper Tran O'Leary, Chandrakana Nandi, Khang Lee, Nadya Peek
UIST '21: ACM Conference on User Interface Software and Technology

Tools, Tricks, and Hacks: Exploring Novel Digital Fabrication Workflows on #PlotterTwitter
Hannah Twigg-Smith, ***Jasper Tran O'Leary***, Nadya Peek
CHI '21: ACM Conference on Human Factors in Computing Systems

Jubilee: an Extensible Machine for Multi-Tool Fabrication
Joshua Vasquez, Hannah Twigg-Smith, ***Jasper Tran O'Leary***, Nadya Peek
CHI '20: ACM Conference on Human Factors in Computing Systems

Who Gets to Future? Design Methods, Race, and Representation in Africatown
Jasper Tran O'Leary, Sara Zewde, Jennifer Mankoff, Daniela K Rosner
CHI '19: ACM Conference on Human Factors in Computing Systems

Charrette: Supporting In-Person Discussions around Iterations in User Interface Design
Jasper Tran O'Leary, Holger Winnemöller, Wilmot Li, Mira Dontcheva, Morgan Dixon
CHI '18: ACM Conference on Human Factors in Computing Systems

Exploring Light as Material: Computational Design and Fabrication of Secondary Optics for Illumination Aesthetics
Cesar Torres, ***Jasper Tran O'Leary***, Molly Nicholas, Eric Paulos
CHI '17: ACM Conference on Human Factors in Computing Systems
BEST PAPER AWARD (Top 1% of Submissions)

Aesthetic Electronics: Designing, Sketching, and Fabricating Circuits through Digital Exploration
Joanne Lo, Cesar Torres, Isabel Yang, ***Jasper Tran O'Leary***, Danny Kaufman, Wilmot Li, Mira Dontcheva, Eric Paulos
UIST '16: ACM Conference on User Interface Software and Technology

Extended Abstracts and Workshops

A Grammar of Digital Fabrication Machines
Jasper Tran O'Leary, Khang Lee, Nadya Peek
CHI '21 — Late-Breaking Work

Machine-o-Matic: a Programming Environment for Prototyping Digital Fabrication Workflows
Jasper Tran O'Leary and Nadya Peek
PLATEAU '19: 10th Annual Workshop on Human-Computer Interaction and Programming Languages — Paper

Machine-o-Matic: a Programming Environment for Prototyping Digital Fabrication Workflows
Jasper Tran O'Leary and Nadya Peek
UIST '19: ACM Symposium on User Interface Software and Technology — Demonstration

Material Flow in Makerspaces
Jasper Tran O'Leary and Nadya Peek
ISAM '18: International Symposium on Academic Makerspaces — Poster

3D Printing Self-Unmaking Objects
Jasper Tran O'Leary
CHI '18: Workshop on Making Use of Non-Deterministic Art Practices in HCI

LiveObjects: Leveraging Theatricality for an Expressive Internet of Things
Cesar Torres, ***Jasper Tran O'Leary,*** Eric Paulos

DIS '16: ACM Conference on Designing Interactive Systems — Demonstration

Patents

Integrated Computing Environment for Managing and Presenting Design Iterations (US10896161B2)
Lubomira A. Dontcheva, Wilmot Li, Morgan Dixon, ***Jasper O'Leary***, Holger Winnemoeller

Selected Teaching Experience

CSE 599 H1 (Prototyping Interactive Systems) Teaching Assistant
University of Washington. Spring 2019.
- Assisted with PhD level course on circuits, fabrication, and machine learning.
- Set up and maintained instructional makerspace for class projects.

HCDE 439 (Physical Computing) Teaching Assistant
University of Washington. Winter 2019, 2020.
- Helped implement new curriculum for undergraduate course in physical computing.
- Troubleshooted and consulted with students for interactive circuit design projects.

TECHIN 511 (Digital Fabrication) Teaching Assistant
University of Washington. Fall 2018 and Fall 2019.
- Guided students through the design process for rapid prototyping.
- Taught students to prototype products using various digital fabrication machines.

CS160 (User Interfaces) Head Teaching Assistant
University of California, Berkeley. Fall 2015 to Fall 2016.
- Led team of teaching assistants through teaching, instructing on best practices when applicable.
- Worked with instructor to manage logistics for course assignments, projects, and team formation.
- Assessed student understanding and adapt course material as necessary.

Mentoring Experience

Maja Ling Han
Masters Student in Computer Science at the University of Copenhagen. Spring 2022.
- Conducted usability interviews with Taxon machine selection interface.
- Prototyped a new front-end for Taxon enabling rapid machine exploration.

Khang Lee (coauthor, UIST '21)
Undergraduate in Electrical and Computer Engineering & HCDE. Winter and Spring 2020.
- Implemented fabrication machine control firmware that handles rapid reconfiguration of machine motors.
- Rebuilt frontend machine design tool to allow users to adjust machine module physical configurations.

Invited Talks

Allen School Colloquium. 10/7/21.

Awards

Best Paper Award (Top 1% of Papers), CHI 2017

Paper: Exploring Light as Material: Computational Design and Fabrication of Secondary Optics for Illumination Aesthetics.

Summer Undergraduate Research Fellowship, UC Berkeley
Topic: Designing Spatial Interactions for the Internet of Things. Summer 2015.

Service

Program Committee — UIST 2022
Conference Web Chair — UIST 2020, UIST 2022
UW CSE Department PhD Visit Days Coordinator — 2021, 2022
Reviewer
CHI Papers '23. UIST Papers '22. DIS Papers '21. CHI Papers '21. SCF Papers '20. TEI Papers '20. UIST Papers '20. Journal of Open Hardware '20. CHI Late-Breaking Work '20. CSCW Papers '19. CHI Late-Breaking Work '19. C&C Posters '19. DIS Papers '18, '19. NordiCHI Papers '18.

Special Recognition for Reviews: CHI '21, 2 reviews.