

Olivia Weng

email: oweng@ucsd.edu

phone: (609) 751 1533

web: <https://oliviaweng.com>

Education

University of California, San Diego

PhD (*In progress*), Computer Science

Advisor: Ryan Kastner

2020 - 2026 (expected)

University of California, San Diego

MS, Computer Science

2020 - 2023

The University of Chicago

BS, Computer Science *spec.* Computer Systems

2016 - 2020

Research Experience

University of California, San Diego

Research Assistant

Advisor: Ryan Kastner

Oct 2020 - Present

The University of Chicago

Research Assistant

Advisor: Andrew A. Chien

Apr 2019 - Jan 2020

The University of Chicago

Research Assistant

Advisor: Yanjing Li

Mar 2018 - Jan 2020

Employment

AMD

Research Intern

Jul 2023 - Present

The University of Chicago

Computer Lab Tutor

Jan 2017 - Jun 2020

Braintree

Software Engineer Intern

Jun 2019 - Aug 2019

The University of Chicago

Research Assistant

Advisor: Yanjing Li

Jun 2018 - Sep 2018

Gridless Power Corporation

Software Intern

Jun 2017 - Aug 2017

Awards

Achievement Rewards for College Scientists (ARCS) Fellowship

San Diego Chapter

2023-2024

National Science Foundation Graduate Research Fellowship

2022 - 2025

Jacobs School of Engineering Fellowship University of California, San Diego	2020 - 2022
Kunzel Powell Fellowship University of California, San Diego	2020 - 2021
Dean's Fund for Undergraduate Research The University of Chicago	2020
Dean's List The University of Chicago	2017, 2018, 2019
Grace Hopper Conference Scholarship The University of Chicago	2018

Publications

1. **FKeras: A Sensitivity Analysis Tool for Edge Neural Networks** In submission
Olivia Weng, Andres Meza, Quinlan Bock, Benjamin Hawks, Javier Campos, Nhan Tran, Javier Duarte, Ryan Kastner.
2. **Pentimento: Data Residue in Cloud FPGAs** In submission
Colin Drewes, Olivia Weng, Andres Meza, Alric Althoff, Bill Hunter, David Kohlbrenner, Ryan Kastner, Dustin Richmond.
3. **Tailor: Altering Skip Connections for Resource-Efficient Inference** To appear
Olivia Weng, Gabriel Marcano, Alireza Khodamoradi, Nojan Sheybani, Farinaz Koushanfar, Kristof Denolf, Javier Duarte, Ryan Kastner.
In *ACM Transactions on Reconfigurable Technology and Systems (TRETS)*.
4. **Adapting Skip Connections for Resource-Efficient FPGA Inference** FPGA 2023
Olivia Weng, Gabriel Marcano, Alireza Khodamoradi, Nojan Sheybani, Farinaz Koushanfar, Kristof Denolf, Javier Duarte, Ryan Kastner.
In *Proceedings of the 2023 ACM/SIGDA International Symposium on Field Programmable Gate Arrays (FPGA)*.
Monterey, CA. February 2023.
5. **Turn on, Tune in, Listen up: Maximizing Channel Capacity in Time-to-Digital Converters** FPGA 2023
Colin Drewes, Olivia Weng, Keegan Ryan, William Hunter, Christopher McCarty, Ryan Kastner, Dustin Richmond
In *Proceedings of the 2023 ACM/SIGDA International Symposium on Field Programmable Gate Arrays (FPGA)*.
Monterey, CA. February 2023. **Nominated for Best Paper.**
6. **Open-source FPGA-ML codesign for the MLPerf Tiny Benchmark** MLBench 2022
Hendrik Borrás, Giuseppe Di Guglielmo, Javier Duarte, Nicolò Ghielmetti, Ben Hawks, Scott Hauck, Shih-Chieh Hsu, Ryan Kastner, Jason Liang, Andres Meza, Jules Muhizi, Tai Nguyen, Rushil Roy, Nhan Tran, Yaman Umuroglu, Olivia Weng, Aidan Yokuda, Michaela Blott
In *Workshop on Benchmarking Machine Learning Workloads on Emerging Hardware (MLBench)* at *Fifth Conference on Machine Learning and Systems (MLSys)*.
Santa Clara, September 2022.
7. **Neural Network Quantization for Efficient Inference: A Survey** arXiv 2021
Olivia Weng
In *arXiv:2112.06126*.
December 2021.
8. **A Tunable Dual-Edged Time-to-Digital Converter** FCCM 2021
Colin Drewes, Steven Harris, Winnie Wang, Richard Appen, Olivia Weng, Ryan Kastner, William

Hunter, Christopher McCarty, Dustin Richmond
 In *IEEE International Symposium on Field-Programmable Custom Computing Machines (FCCM)*
 Virtual, May 2021.

9. **Design Space Exploration for Machine Learning Architectures** ReCoDe 2021
 Michael Barrow, Olivia Weng, Ryan Kastner
 In *Workshop on Reimagining Codesign*
 hosted by *US DOE, Office of Advanced Scientific Computing Research*.
 Virtual, March 2021.
10. **Hardware-efficient Residual Networks for FPGAs** SLOHA 2021
 Olivia Weng, Alireza Khodamoradi, and Ryan Kastner.
 In *Workshop on System-level Design Methods for Deep Learning on Heterogeneous Architectures (SLOHA)*
 at *Conference on Design, Automation and Test in Europe (DATE)*.
 Grenoble, France, February 2021.
11. **Evaluating Achievable Latency and Cost: SSD Latency Predictors** AccML 2020
 Olivia Weng and Andrew A. Chien.
 In *Workshop on Accelerated Machine Learning (AccML)*
 at *High Performance Embedded Architectures and Compilers (HiPEAC)*.
 Bologna, Italy, January 2020.

Presentations

- | | |
|--|--------------------|
| FKeras: A Sensitivity Analysis Tool for Edge Neural Networks
Fast Machine Learning for Science Workshop 2023, London, UK | September 27, 2023 |
| Open-source FPGA-ML codesign for the MLPerf Tiny Benchmark
MLBench 2022, Santa Clara, CA | September 1, 2022 |
| Hardware-efficient Residual Networks for FPGAs
SLOHA 2021, Virtual | February 5, 2021 |
| Evaluating Achievable Latency and Cost: SSD Latency Predictors
AccML 2020, Bologna, Italy | January 20, 2020 |

Teaching

- | | |
|--|--------------------------|
| CSE 142L: Computer Architecture: A Software Perspective – <i>Head TA</i>
· Developed control flow graph visualizer for students to visually see computer architecture concepts in action | Summer 2021, Fall 2021 |
| CMSC 15400: Introduction to Computer Systems – <i>Grader</i> | Spring 2020 |
| CMSC 15200: Introduction to Computer Science II – <i>Grader</i> | Summer 2018, Winter 2019 |
| CMSC 22200: Computer Architecture – <i>Grader</i> | Spring 2018 |
| CMSC 16100: Honors Introduction to Computer Science I – <i>Grader</i> | Autumn 2017 |

Service

- | | |
|---|--------------------|
| UCSD CSE NSF GRFP Workshop , Organizer
· Develop curriculum on how to write a strong application for the NSF GRFP, leading students through weekly lessons and peer review
· Mentees: Anya Bouzida (Awardee), Katherine Izhikevich, Lisa Takai | Oct 2022 - Present |
| UCSD CSE Graduate Committee , PhD Student Representative
· Represent PhD student interests during committee discussions to guide the formation of a new Research Exam and guidelines for PhD student advising | Oct 2022 - Present |

- UCSD GradWIC Mentorship Program**, Mentor Oct 2021 - Present
- Mentor a Masters student (Qian Qian) in finding a software engineering internship and guiding her through the interview process
 - Mentored a Masters student (Feiyu) in starting research in machine learning hardware acceleration
- UCSD CSE DEI Book Club**, Organizer + Member Oct 2020 - Present
- Select books and lead discussion on pressing and timely diversity issues, focusing on the U.S.
 - Books read: *The Color of Law*, *Minor Feelings*, *How to be an Anti-Racist*, *Whistleblower: My Unlikely Journey to Silicon Valley and Speaking Out Against Injustice*, *Between the World and Me*, *The Loneliest Americans*, *The End of Bias: A Beginning*, *Automating Inequality*, *Fulfillment: Winning and Losing in One-Click America*
- MyCSPHD.org**, Content Creator + Panelist Dec 2020 - Apr 2021
- Created an informational video on the CS Ph.D. experience based on an interview with a Ph.D. student at the University of Washington, currently available on the My CS Ph.D Youtube channel
 - Participated in two My CS Ph.D. information session panels, answering questions about why pursue a Ph.D in CS and what Ph.D student life is like
- Jacobs Undergraduate Mentoring Program**, Mentor Oct 2020 - Jun 2021
- Mentored three undergraduate students, fostering connections between software engineers in industry and maintaining morale amidst a global pandemic
- UCSD GradWIC Graduate School Application Workshop**, Volunteer Oct 2020 - Mar 2021
- Reviewed and gave feedback on several undergraduate students' graduate school application materials over multiple workshop sessions
- ACM-W@UChicago Mentorship Program**, Undergraduate Mentor May 2018 - Jun 2020
- Guided Neha through how to start research and secure a research advisor, pointing her to various professors in the department with whom she could potentially work—she worked with Professor Shan Lu
 - Supported and checked in with Melanie as she went through the internship recruiting process and the CS major at UChicago, reviewing her resume and helping her select classes
- CS Student Activities Council**, Student Representative Sep 2017 - Jun 2020
- Secured funding to support four computer science student organizations on campus to host events that foster collaboration and grow the undergraduate tech community at UChicago
- Asynchronous Anonymous**, Director Jan 2017 - Jun 2020
- Coordinated weekly tech talks given by a diverse set of undergraduates, elevating minority speakers, to build an inclusive tech community at UChicago, engaging students with new technologies
- Society of Women Engineers' Girls' Day in STEM**, Volunteer May 2019
- Created a workshop that taught basic cryptography topics, in which 50 middle and high school girls participated
 - Facilitated a discussion on diversity and what it means to be a woman in STEM among a group of 7 local Chicago middle school girls
- compileHer Tech Capstone 2019**, Volunteer Apr 2019
- Led a group of 12 local Chicago middle school girls through interactive workshops that introduced select computer science topics, guiding them through completing each activity
- ACM-W@UChicago**, Board Member Jan 2017 - Jun 2018
- Organized study breaks and student panels in committee of five women computer science majors weekly to bring women and minority computer science community together and discuss diversity issues in the tech industry