

Logan Weber

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Education

Massachusetts Institute of Technology

PHD IN COMPUTER SCIENCE

- Advisors: Saman Amarasinghe and Michael Carbin
- Research Focus: Programming Languages, Machine Learning, and Systems

Cambridge, MA

Sep. 2020 - PRESENT

University of Washington

COMBINED B.S./M.S. IN COMPUTER SCIENCE

- Advisor: Zachary Tatlock
- Mentors: Jared Roesch and Tianqi Chen
- Research Focus: Programming Languages, Machine Learning, and Systems

Seattle, WA

Sep. 2014 - June 2020

Research Projects

MicroTVM

DEEP LEARNING ON BARE-METAL DEVICES

- Created infrastructure in Apache TVM to support compilation and automatic optimization of machine learning models on microcontrollers.
- Acted as the core technical contributor before transferring ownership of the technology to OctoML.

Seattle, WA

Jan. 2019 - Sep. 2020

Relay

FUNCTIONAL AND DIFFERENTIABLE IR FOR MACHINE LEARNING

- Aided development of an intermediate representation for machine learning, featuring a tensor-oriented, dependent type system.
- Relay is used every time Amazon Alexa is asked a question.

Seattle, WA

Feb. 2018 - Sep. 2020

Relay Dashboard

MACHINE LEARNING BENCHMARKING AND ANALYSIS FRAMEWORK

- Aided design and development of a system for performing scalable and reproducible machine learning experiments in a language-agnostic fashion.

Seattle, WA

June 2019 - Sep. 2020

Apache TVM

OPEN DEEP LEARNING COMPILER STACK FOR CPUs, GPUS, AND SPECIALIZED ACCELERATORS

- Became the 8th most impactful contributor (by lines of code modified) out of 300+ contributors, as of 11/30/2019.
- Was awarded reviewer status by the TVM community.

Seattle, WA

Feb. 2018 - PRESENT

Judgement-Based Grading

CHROME EXTENSION

- Built a UI over Canvas's SpeedGrader interface to implement grading improvements based on the PI's prior educational research.

Seattle, WA

Jul. 2016 - Sep. 2016

Induction Tutor

WEB APPLICATION

- Built the first ever interface for both teaching induction to computer science students and for automating grading of induction proofs.

Seattle, WA

Apr. 2016 - Jul. 2016

Personal Projects

0x10c

RUST 3D GAME ENGINE

Seattle, WA

Sep. 2017 - Dec. 2018

Exort

JAVA 3D MOBA ENGINE PROTOTYPE

Ellensburg, WA

Mar. 2014 - Oct. 2014

ModernGL

JAVA LIBRARY FOR OPENGL 3.0+

Ellensburg, WA

Mar. 2014 - July 2015

Junkbot

JAVA 2D PLATFORMER

Ellensburg, WA

Sep. 2013 - Dec. 2013

Tetris

JAVA NES TETRIS RECREATION

Ellensburg, WA

Apr. 2013 - June 2013

Java2D

JAVA 2D GAME ENGINE

Ellensburg, WA

Dec. 2012 - Mar. 2014

Writing

Living Life On The Low-Power Edge: Tiny Models On Tiny Devices

LOGAN WEBER

2020

Master's Thesis

TinyML: How TVM Is Taming Tiny

LOGAN WEBER AND ANDREW REUSCH

2020

Post on TVM, OctoML, and Arm Blogs

Relay: A High-Level Compiler for Deep Learning

JARED ROESCH, STEVEN LYUBOMIRSKY, MARISA KIRISAME, LOGAN WEBER, JOSH POLLOCK, TIANQI CHEN, ZACHARY TATLOCK

2019

ArXiv Preprint

Relay: A New IR for Machine Learning Frameworks

JARED ROESCH, STEVEN LYUBOMIRSKY, LOGAN WEBER, JOSH POLLOCK, MARISA KIRISAME, TIANQI CHEN, ZACHARY TATLOCK

2018

Proceedings of the 2nd ACM SIGPLAN International Workshop on Machine Learning and Programming Languages (MAPL 2018).

Employment

Part-Time Research Engineer

Seattle, WA

OCTOML INC

September 2019 - September 2020

- Researched methods for running and optimizing machine learning models on microcontrollers.
- Became OctoML's very first intern!

Graduate Research Assistant

Seattle, WA

UNIVERSITY OF WASHINGTON, PLSE AND SAMPL LABS

June 2019 - August 2019

- Researched methods for performing and analyzing machine learning experiments in a reproducible and scalable manner.

Software Engineering Intern

Santa Clara, CA

NVIDIA, GRAPHICS DRIVERS TEAM

September 2018 - December 2018

- Created a tool to visualize arbitrary hierarchical temporal data (e.g., to visual graphics driver performance, kernel thread scheduling, and lock contention).

Software Engineering Intern

Pittsburg, PA

DUOLINGO, CORE LEARNING TEAM

June 2018 - September 2018

- Researched methods to more accurately assess learners' language proficiency.

Software Engineering Intern

Mountain View, CA

GOOGLE, ANDROID CAMERA TEAM

June 2017 - September 2017

- Contributed to several open source projects for Android camera testing.

Undergraduate Research Assistant

Seattle, WA

UNIVERSITY OF WASHINGTON, BLANK LAB

March 2016 - June 2017

- Built educational infrastructure for upper-level computer science courses.

Teaching Assistant

Seattle, WA

UW CSE DEPARTMENT

March 2016 - June 2019

- Assisted teaching and grading for upper-level computer science courses.

Hay Baler & Equipment Technician

Ellensburg, WA

CHARLTON FARMS INC

June 2014 - September 2015

- Coordinated with 2-10 other equipment operators to strategically prepare/bale 1000 acres of hay under 90-hour work weeks.

Presentation

TVM Conference 2019

Seattle, Washington, USA

PRESENTER FOR μ TVM

December 2019

Arm Research Summit

Austin, Texas, USA

POSTER PRESENTER FOR μ TVM

September 2019

TVM For Fun and Profit Tutorial at ISCA 2019

Phoenix, Arizona, USA

PRESENTER FOR μ TVM

June 2019

Teaching

CSE 451, Introduction to Operating Systems	University of Washington
TEACHING ASSISTANT	March 2019 - June 2019
CSE 490Q, Introduction to Quantum Computing and Quantum Programming in Q#	University of Washington
TEACHING ASSISTANT	January 2019 - March 2019
CSE 410, Computer Systems	University of Washington
TEACHING ASSISTANT	March 2018 - June 2018
CSE 311, Foundations of Computing I	University of Washington
TEACHING ASSISTANT	March 2017 - June 2017
CSE 332, Data Structures and Parallelism	University of Washington
TEACHING ASSISTANT	January 2017 - March 2017
CSE 332, Data Structures and Parallelism	University of Washington
TEACHING ASSISTANT	September 2016 - December 2016
CSE 311, Foundations of Computing I	University of Washington
TEACHING ASSISTANT	March 2016 - June 2016

Skills

Rust | Python | C | C++ | Haskell | Java | LaTeX | Bash
VSCode | Vim | Spacemacs | IntelliJ | Git