

Max Willsey

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mwillsey.com

Education

University of Washington Sep 2016 – present
Ph.D. Computer Science

Carnegie Mellon University Aug 2012 – May 2016
B.S. Computer Science
Minor in Mathematics
University Honors and College Honors in Computer Science
Thesis: *Design and Implementation of Concurrent C0*

Current Projects

Domain-Specific Reconfigurable Accelerators Sep 2016 – present
with Vincent Lee, Luis Ceze, Rastislav Bodik, Alvin Cheung

- Exploring methods for designing and programming DSRAs using techniques like program synthesis
- Automatically identifying building blocks that implement functionality across applications

Past Projects

Concurrent C0 Design and Implementation Jan 2015 – May 2016
Senior Honors Thesis
Advisor: Frank Pfenning

- Worked on a concurrent extension to C0, a research project started as a well-defined subset of C
- Used guarantees from session typing for efficient message passing implementation including intelligent scheduling decisions, lower memory impact, and deadlock free execution

Abstractions for Concurrent Interactive Programs Aug 2014 – Dec 2014
Advisor: Umut Acar

- Worked on a functional programming for interaction, including an implementation in OCaml

Teaching

Hardware/Software Interface (CSE 351) Dec 2016 – Mar 2017
University of Washington

Operating Systems (15-410) Aug 2015 – May 2016
Carnegie Mellon University

Professional Experience

Apple

May 2014/15 – Aug 2014/15

iOS Performance (2015): investigated and tested changes to scheduler

Siri Operations (2014): created a system for anomaly detection in logs

SEI at Carnegie Mellon

May 2013 – Aug 2013

Created a Twitter-like application for hundreds of users to coordinate training efforts in real time

Publications

Max Willsey, Rohini Prabhu, and Frank Pfenning. “Design and Implementation of Concurrent C0”. Fourth International Workshop on Linearity, Electronic Proceedings in Theoretical Computer Science (EPTCS), June 2016

Awards

Qualcomm Innovation Fellowship

May 2017

Program Synthesis for Domain Specific Reconfigurable Accelerators
with Vincent Lee, Luis Ceze, Rastislav Bodik, Alvin Cheung

Exemplary Thesis

May 2016

Chosen by the senior thesis committee

Andrew Carnegie Scholar

Sep 2016

40 seniors (of approx. 1500) selected by deans and dept. heads for leadership and academic excellence

Coursework

University of Washington

548 Computer Architecture

507 Computer-Aided Reasoning

544 Database Management Systems

Carnegie Mellon University

15-417 Higher Order Compilation

15-411 Compiler Design

15-312 Programming Languages

15-410 Operating Systems

15-451 Algorithm Design/Analysis

15-213 Computer Systems

21-484 Graph Theory

15-396 Science of the Web