

## EDUCATION

---

### Stanford University

*Ph.D. candidate in Computer Science*

*Advisors: Prof. David Mazières and Prof. Dawson Engler*

Stanford, CA

*Sep. 2021 – Present*

### Harvard University

*S.M. in Computer Science*

Cambridge, MA

*Sep. 2020 – May 2021*

### Harvard College

*A.B. Magna cum laude with highest honors in Computer Science*

Cambridge, MA

*Aug. 2017 – May 2021*

## PUBLICATIONS

---

Zachary Yedidia. “Lightweight Fault Isolation: Practical, Efficient, and Secure Software Sandboxing” (2024). To appear at ASPLOS 2024. PDF.

Zachary Yedidia and Stephen Chong. “Fast Incremental PEG Parsing” (2021). Proceedings of the 14th ACM SIGPLAN International Conference on Software Language Engineering (SLE), October 2021. **Best paper award**. PDF, Slides.

Maximilian Lam, Zachary Yedidia, Colby Banbury, Vijay Janapa Reddi. “Precision Batching: Bitserial Decomposition for Efficient Neural Network Inference on GPUs” (2021). Proceedings of the 30th International Conference on Parallel Architectures and Compilation Techniques (PACT), September 2021. PDF.

## WRITING

---

Zachary Yedidia. “Incremental PEG Parsing” (2021). Senior thesis, advised by Prof. Stephen Chong. PDF.

Zachary Yedidia, “SystemVerilog Guide.” Course materials for CS 141 (Spring 2020) at Harvard. PDF.

## AWARDS

---

NSF Graduate Research Fellowship (2022-2024).

## OPEN SOURCE PROJECTS

---

### Micro Text Editor

Website, GitHub Project

I created and launched a text editor called Micro in April 2016. Micro is a project with over 20,000 stars on GitHub, more than 500,000 downloads, and 100+ contributors. It aims to be a successor to Nano as a simple to use terminal-based text editor. Micro was the subject of multiple news articles and has been featured on the front page of Hacker news multiple times. Micro is available in many package managers such as: Homebrew, Apt, Snap, AUR, Chocolatey and more.

### Lightweight Fault Isolation

Paper, GitHub Project

An efficient software sandboxing system for ARM64 based on machine code verification and software-based fault isolation (SFI).

### Multiplix

GitHub Project

A small Unix-like operating system for Arm and RISC-V single-board computers. Supports Raspberry Pi and VisionFive boards.

### GPeg

Paper, Thesis, Slides, GitHub Project

Library for PEG parsing, as part of my senior thesis research with Professor Stephen Chong. GPeg uses a parsing virtual machine for dynamic parser generation, and implements a novel algorithm for efficient incremental parsing. Additionally includes a library for syntax highlighting: [github.com/zyedidia/flare](https://github.com/zyedidia/flare).

<b>Knit</b>	GitHub Project
A flexible build tool that combines Lua with Make's declarative rules language.	
<b>Literate Programming Tool</b>	Website, GitHub Project
A tool for compiling Literate programs written in any programming language.	
<b>Eget</b>	GitHub Project
A tool for automatically installing pre-built binaries distributed in GitHub releases.	
<b>Go Generic Data Structures</b>	Github Project
A library of generic data structures for Go.	
<b>RISC-V collection</b>	Github Project
Including: a pipelined rv32 core written in Chisel (running on open-source FPGAs), a RISC-V symbolic execution engine, and a toy RISC-V assembler.	

---

## SERVICE

External reviewer for ACM TOPLAS.

---

## TEACHING

<b>Distributed Systems (CS244b)</b>	Stanford
<i>Course Assistant for Prof. David Mazières</i>	<i>Spring 2024</i>
<b>Advanced Topics in Operating Systems (CS240)</b>	Stanford
<i>Course Assistant for Profs David Mazières and Dawson Engler</i>	<i>Spring 2023</i>
<b>Using Bits to Control Atoms (CS49n)</b>	Stanford
<i>Course Assistant for Prof. Dawson Engler</i>	<i>Autumn 2021</i>
<b>Systems Programming and Machine Organization (CS61)</b>	Harvard
<i>Teaching Fellow for Profs Eddie Kohler and Minlan Yu</i>	<i>Fall 2020</i>
<b>Computing Hardware (CS141)</b>	Harvard
<i>Teaching Fellow for Profs David Brooks and Vijay Reddi</i>	<i>Spring 2019, Spring 2020</i>
<b>Compilers (CS153)</b>	Harvard
<i>Teaching Fellow for Prof. Stephen Chong</i>	<i>Fall 2019</i>

---

## EXPERIENCE

<b>SiFive</b>	San Mateo, CA
<i>Chisel Team Intern</i>	<i>Summer 2022</i>
<b>Zero ASIC</b>	Cambridge, MA
<i>Intern</i>	<i>Summer 2021</i>
<b>Harvard University</b>	Cambridge, MA
<i>HCRP Research Fellow (Advisor: Prof. Stratos Idreos)</i>	<i>Summer 2020</i>
<b>Raytheon Company</b>	Tucson, AZ
<i>Internal Research and Development Intern</i>	<i>July – August Summer 2019</i>
<i>Advanced Missile Systems</i>	
<b>Princeton University</b>	Princeton, NJ
<i>Research Assistant (Advisor: Prof. Naveen Verma)</i>	<i>May – June Summer 2019</i>
<b>Harvard University</b>	Cambridge, MA
<i>PRISE Research Fellow (Advisor: Prof. Eddie Kohler)</i>	<i>Summer 2018</i>

---

## PROGRAMMING SKILLS

<b>Primary Interests:</b>	Computer Systems, Hardware/Architecture, Compilers.
<b>Languages:</b>	Go, C/C++, D, Chisel/Scala, SystemVerilog, Python, Java, OCaml, Lua.
<b>Tools:</b>	Vim, Git, Yosys, Verilator, Xilinx Vivado, L <sup>A</sup> T <sub>E</sub> X.