

Zachary Yedidia

zyedidia@stanford.edu

zyedidia.github.io, github.com/zyedidia

Areas of interest: operating systems, security, compilers, computer architecture.

EDUCATION

Stanford University

Ph.D. candidate in Computer Science

Advisors: Prof. David Mazières and Prof. Dawson Engler

Stanford, CA

Sep. 2021 – 2027 (expected)

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

Deterministic Client: Enforcing Determinism on Untrusted Machine Code

Zachary Yedidia, Geoffrey Ramseyer, David Mazières

To appear at OSDI 2025

Segue & ColorGuard: Optimizing SFI Performance and Scalability on Modern Architectures

Shravan Narayan, Tal Garfinkel, Evan Johnson, Zachary Yedidia, Yingchen Wang, Andrew Brown, Anjo Vahldiek-Oberwagner, Michael LeMay, Wenyong Huang, Xin Wang, Mingqiu Sun, Dean Tullsen, Deian Stefan
ASPLOS 2025

DeCl: Deterministic and Metered Native Sandboxes

Zachary Yedidia, Geoffrey Ramseyer, David Mazières

SIB 2024 (workshop)

Lightweight Fault Isolation: Practical, Efficient, and Secure Software Sandboxing

Zachary Yedidia

ASPLOS 2024

Fast Incremental PEG Parsing

Zachary Yedidia and Stephen Chong

SLE 2021

Precision Batching: Bitserial Decomposition for Efficient Neural Network Inference on GPUs

Maximilian Lam, Zachary Yedidia, Colby Banbury, Vijay Janapa Reddi

PACT 2021

OPEN SOURCE PROJECTS

Lightweight Fault Isolation (LFI)

Paper, GitHub Project

A state-of-the-art software-based sandboxing system that enforces memory isolation on machine code within a single address space. LFI can be used for in-process library sandboxing, low-latency serverless functions, application sandboxing, smart contracts, and more. This is my primary current project.

Micro Text Editor

Website, GitHub Project

I created and launched a text editor called Micro in April 2016. Since then, Micro has gained over 25,000 stars on GitHub, more than 750,000 downloads, and 100+ contributors. It aims to be a successor to Nano as a simple-to-use terminal-based text editor. Micro is available in many package managers such as Homebrew, Apt, Snap, AUR, Chocolatey and more.

GPeg

Paper, Thesis, Slides, GitHub Project

Library for PEG parsing, as part of my senior thesis research with Professor Stephen Chong. Additionally includes a library for syntax highlighting: github.com/zyedidia/flare.

Literate Programming Tool

Website, GitHub Project

A tool for compiling Literate programs written in any programming language.

Eget

GitHub Project

A tool for automatically installing pre-built binaries distributed in GitHub releases.

Go Generic Data Structures

Github Project

A library of generic data structures for Go.

Knit

GitHub Project

A flexible build tool that combines Lua with Make's declarative rules language.

WRITING

Incremental PEG Parsing

Senior thesis (2021), advised by Prof. Stephen Chong.

SystemVerilog Guide

Course materials for CS 141 (Spring 2020) at Harvard

AWARDS

NSF Graduate Research Fellowship (2022-2024).

SERVICE

External reviewer for ACM TOPLAS.

EXPERIENCE

SiFive

Chisel Team Intern

San Mateo, CA

Summer 2022

Zero ASIC

Intern

Virtual

Summer 2021

Harvard University

HCRP Research Fellow (Advisor: Prof. Stratos Idreos)

Cambridge, MA

Summer 2020

Raytheon Company

Internal Research and Development Intern

Tucson, AZ

July – August Summer 2019

Princeton University

Research Assistant (Advisor: Prof. Naveen Verma)

Princeton, NJ

May – June Summer 2019

Harvard University

PRISE Research Fellow (Advisor: Prof. Eddie Kohler)

Cambridge, MA

Summer 2018

TEACHING

Distributed Systems (CS244b)

Course Assistant for Prof. David Mazières

Stanford

Spring 2024

Advanced Topics in Operating Systems (CS240)

Course Assistant for Profs David Mazières and Dawson Engler

Stanford

Spring 2023

Using Bits to Control Atoms (CS49n)

Course Assistant for Prof. Dawson Engler

Stanford

Autumn 2021

Systems Programming and Machine Organization (CS61) <i>Teaching Fellow for Profs Eddie Kohler and Minlan Yu</i>	Harvard Fall 2020
Computing Hardware (CS141) <i>Teaching Fellow for Profs David Brooks and Vijay Reddi</i>	Harvard Spring 2019, Spring 2020
Compilers (CS153) <i>Teaching Fellow for Prof. Stephen Chong</i>	Harvard Fall 2019

TALKS

Deterministic Client: Enforcing Determinism on Untrusted Machine Code <i>MIT DCI</i>	May 2025
Securing Native Libraries on Android with LFI <i>Qualcomm Product Security Summit</i>	May 2025
Deterministic Client: Enforcing Determinism on Untrusted Machine Code <i>Stanford Security Workshop</i>	April 2025
Lightweight Fault Isolation <i>Software Compartmentalization Community Tech Talk</i>	April 2025
Deterministic Client: Enforcing Determinism on Untrusted Machine Code <i>Stanford Security Lunch</i>	March 2025
Sandboxing Native Libraries on Android with Lightweight Fault Isolation (LFI) <i>Google</i>	February 2025
DeCl: Deterministic and Metered Native Sandboxes <i>SIB</i>	September 2024
DeCl: Deterministic and Metered Native Sandboxes <i>Stanford Software Lunch</i>	July 2024
Lightweight Fault Isolation: Practical, Efficient, and Secure Software Sandboxing <i>ASPLOS</i>	April 2024
Lightweight Fault Isolation: Practical, Efficient, and Secure Software Sandboxing <i>Stanford Security Workshop</i>	April 2024
Lightweight Fault Isolation: Practical, Efficient, and Secure Software Sandboxing <i>Stanford Security Lunch</i>	November 2023
Classic Software Fault Isolation and WebAssembly <i>WebAssembly Research Day</i>	October 2023
Multiplix: using D for kernel development <i>DConf</i>	September 2023
Fast Incremental PEG Parsing <i>SLE</i>	November 2021
Fast Incremental PEG Parsing <i>Stanford Software Lunch</i>	November 2021