Ethan Horowitz

ethan.horowitz@duke.edu • (516) 680-8206 • ethanhorowitz.me • linkedin.com/in/ethanhorowitz0 • github.com/ethaniel0

EDUCATION

Duke University - Pratt School of Engineering | Durham, NC Class of 2025

Double Major in Electrical & Computer Engineering, Computer Science | GPA: 3.9/4.0 (Dean's List)

Relevant Courses: Software Design, Computer Architecture / CPU Design, Computer Vision, IOT Devices

Activities & Honors:

Duke Robotics Club - Mechanical and Acoustics (all years)
Duke Swing Dance Club - Treasurer, Showcase Coordinator, Choreographer
Entrepreneurship Orientation Leader for 80+ incoming students; led Figma workshop, design sprint group
1st Place winner at HackDuke 2023 Hackathon
Fall 2023 semester abroad in Madrid, Spain, at La Universidad Carlos III
Habitat for Humanity volunteer

Skills: Python, Java, JavaScript, Rust, C/C++, C#, Verilog, SQL, NoSQL, FPGA, Figma

EXPERIENCE

Lab Research Assistant | Duke Department of Electrical Engineering May 2024 - Present

- In conjunction with NASA, designed and scripted KiCad PCB to switch 24,000 antenna elements at once
- Programmed FPGA to receive and transmit large antenna configurations in under 50μs

Teaching Assistant | Duke Department of Computer Science Jan 2023 - May 2024

- Mentored Advanced Software Design students, guiding them through teamwork, git, and design
- Collaborated with professor on how to modernize the course by utilizing current development and AI tools

BIM Software Intern | WSP USA, NYC Office May 2023 - Aug 2023

- Worked with project leaders in multinational engineering and design firm to automate code compliance checks for buildings, offering 10x speedup; designed multithreaded C# library to fix room boundaries for analysis tools

Technology Director | WaffleHacks Hackathon Nov 2021 - Present

- Direct and contribute to the WaffleHacks technology team projects (React website, judging platform)
- Lead web development workshop to 50+ participants each year; manage Google Cloud, AWS, git, etc.

PROJECTS

Mini Radar System | CPU Design Final Project Spring 2024

- Wrote a compiler from scratch in C++ to convert C code with inline assembly to a simplified MIPS ISA
- Designed a pipelined CPU in Verilog, tested and run on an FPGA
- Interfaced CPU with ultrasonic sensor and stepper motor, debugged with logic analyser, oscilloscope, and simulation

Smart Dorm Display | IOT Final Project Spring 2024

- Featured in *Duke Engineering Now* Newsletter; created window display with a Raspberry Pi and LED strips
- Wrote async Flask web server, React client website; developed games and video player to fit the display

Game Engine | Software Development Final Project Spring 2023

- Designed and programmed game engine backend in 10-person team, with daily stand-ups
- Successfully created system to make and run 2D games ranging from cards to monopoly

Autonomous Underwater Vehicle | Duke Robotics Club Sep 2021 - Present

- Build autonomous underwater drone to complete specialized tasks and compete internationally
- Researched and programmed robust methods to detect and locate underwater acoustic pings

Personal Interests: Word game design (thymesgames.com), running (half-marathoner), cooking, skiing