Nathaniel Smith

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Education

The Pennsylvania State University, University Park Campus 2021 - 2025

• Bachelor of Science in Computer Engineering, Graduating 12/2025, GPA = 3.0

Professional Work Experience

·Research at Tohoku University **April 2024 - August 2024**

- Worked on a project to create a LSTM machine learning algorithm to predict future network traffic to help networks utilize less network resources and improve efficiency.
- Ran a simulation to test improvements of this proactive prediction method vs typical reactive methods, was able to accommodate 2% more network traffic than typical methods

· Tech Support Assistant at Jackson Hewitt Tax Service **2020 – 2021**
· Auxiliary Police Officer at Penn State University **Spring 2023 – Fall 2023**
· Voting Registration at Project 26 **2024 – 2024**

Awards

· Lockheed Martin Design Excellence Award **Fall 2024**

- Awarded as a result of my team placing 1st out of 63 teams in Penn State's Fall 2024 Capstone Showcase. My team developed a prototype of a remote controlled IV injection system for use in medical settings to reduce risk of sepsis infection in patients. As team leader, I worked with my team to build a remote control tablet, wirelessly connecting to an ESP32 microcontroller to control a IV injection system we built from scratch.

· Gilman Grant **Spring 2024**

- Given to fully fund my research at Tohoku University. Through this award, I hold Federal Non-Competitive Eligibility.

Software Projects

All of these (along with more examples) can be found on my personal GitHub, at: github.com/17madman

· **Course Scheduler – Written in Java**
- Java application utilizing SQL statements and a Derby database
- Runs a system for administrators to create courses in the database, and for students to look through available courses and enroll themselves

· **AI Clone Bot – Written in Python**
- A chat bot utilizing the GPT 3.5 Turbo API and ElevenLabs AI voice cloning software.
- Dynamically engages in conversation using the voice of a chosen person.

· **CMPEN 331 Final Project – Written using Verilog**
- Designed and implemented a 32 bit MIPS based processor

Extracurriculars

· Special Operations Officer of the Penn State IEEE Chapter **2021 – Present**

- I develop and run workshops to teach underclassmen computer/ electrical engineering skills, such as making use of APIs or soldering.

- I organize and lead teams to develop projects to benefit the club as a whole, such as creating bots (to limit spam and send reminders to members of upcoming events), building an arcade cabinet from spare components to increase club engagement, and more.

· Member of Ohana THON Organization **2023 - 2024**

Skills & Abilities

- Programming in Python, Java, C#, C, Assembly
- Experience using Visual Studio
- PCB Design and Assembly
- Circuit Development (Via Multisim)
- Microcontroller Programming (Arduino and ESP32)
- Verilog Programming
- AI and ML Experience
- HTML Development