Nathaniel Smith

Bellefonte, PA | 814-880-0685 | nathanielsmith9158@gmail.com | 17madman.github.io

Education

The Pennsylvania State University, University Park Campus 2021 - 2025

Bachelor of Science in Computer Engineering, graduating August 2025, GPA = 3.0

Work Experience

Embedded Hardware Engineer Intern at RTD Embedded Tech   *University Park, PA: 6/2025 – 8/2025*
- Will work to design rugged embedded systems, of a PC104 format
- Will utilize lab equipment (DMMs, oscilloscopes, etc) to debug and troubleshoot
- Will utilize C to write linux drivers for interfacing with RTD systems

Research at Tohoku University   *Sendai, Japan: 4/2024 - 8/2024*
- Utilized a neural network to create a machine learning algorithm, predicting future network traffic to help reduce network resource cost and improve efficiency.
- Proactive method accommodated 2% more network traffic than typical methods

Tech Support Assistant at Jackson Hewitt Tax Service   *State College, PA: 8/2020 – 7/2021*
- Solely responsible for all tech issues at 4 separate offices

Auxiliary Police Officer at Penn State University   *State College, PA: 1/2023 – 10/2023*
- Worked late night (8PM-4AM), short notice shifts, ensuring the safety of students on campus

Awards

Lockheed Martin Design Excellence Award   *12/2024*
- Placed 1st out of 63 teams in Penn State's Fall 2024 Capstone Showcase
- Developed prototype of a remote controlled robotic IV injection system
- Utilized Raspberry Pi and created UI design for a remote control tablet
- Built IV injection system controlled by ESP32 microcontroller

Projects

Pathfinder Robotics Challenge Director   *To be held 4/2025*
- Proposed, directing and leading entire competition, sponsored by Northrop Grumman
- Managed over 50 participants and 6 officers
- Taught participants to build robots capable of autonomously navigating an obstacle course

AI Clone Bot – Written in Python   *3/2023*
- 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.

Wifi Network Relay   *11/2024*
- Developed a network relay using a Raspberry Pi flashed with Debian
- Authenticates with secured campus WiFi, allowing us to easily connect devices that otherwise would be difficult to configure (3D printers, servers, etc)

IEEE Ethical Hacking Workshop   *02/2024*
- Taught fundamentals of Linux networking, and how to use penetration test tools of Kali Linux
- Utilized nmap to scan open ports, searching for vulnerabilities such as eternalblue
- Showcased how to use metasploit to gain shell access of target machine

Extracurriculars

Special Operations Officer of the Penn State IEEE Chapter   *7/2021 – Present*
- Organizing and leading teams to develop projects to benefit the club as a whole
- Creating bots to limit spam and send reminders to members of upcoming events, building an arcade cabinet from spare components, building a micro drone, etc.

Skills & Abilities

- Programming in Python, Java, C#, C, C++
- AI and ML Experience
- Assembly and Microcontroller
- Embedded Systems Experience
- PID Controller Experience
- Robotics Experience
- PCB Design (KiCad) and Assembly
- Circuit Development (Via Multisim)
- Verilog and VHDL
- Linux