Nathan Joseph Svoboda

630-532-9604||njsvoboda04@gmail.com||Tempe,Arizona||https://ennjaywithagreyhat.github.io/portfolio/#/home

Education

Bachelor of Science, Computer Science | May 2026 **GPA: 3.7**
Barrett the Honors College at Arizona State University
- Honors: Dean's List 4 Semesters

Technical Summary

Programming Languages: C, C++, Java, Python (*Libraries: Pandas, Numpy, TensorFlow, Djitellopy, OpenCV, Matplotlib, Keras*), React, HTML, CSS, JavaScript, Git, SQL, Prolog, Scheme, Bash, Linux

Professional Experience

United Engineering / Hawkeye Energy Solutions Full Stack Internship **5/27/2024 - Present**
- I learned how to work with React and to work with both a frontend software product, HESLayers, and a backend database that came from JACEs, which required me to code and debug a Java based backend due to issues
- Currently working 10 hours / week to contribute to data integration of history points from HVAC meters at the University of Illinois by working with the Niagara framework and am on standby for any software product updates

Software Team Lead for Paragon Autonomous **01/11/2024 - Present**
- Experience with Python, TensorFlow, Jupyter Notebooks, GitHub, and Kaggle in programming an autonomous fire surveillance drone with the capability to notify nearby fire departments of an impending or potential emergency
- Implemented JPS+ algorithm to find the best path using point clouds in 3D space and with computation restrictions
- Worked with members of the team to ensure drone movement and compatibility, along with coding assistance

American Grassroots Soccer Referee **05/2019 - 08/08/2022**
- Improved my time management, organization, and decision-making in stressful situations
- Developed leadership experience through discussion with other referees, players, and parents

Village of Westmont Public Works **06/05/2023 - 08/08/2023**
- Experience in the forestry department with physical labor, full-time work, and a 14-hour shift for the first time
- Fostered teamwork and persistence, and experienced being held accountable for a public image

Academic and Personal Projects → github.com/EnnJayWithAGreyHat

Project: Dijkstra and Prim's Algorithm **4/15/2024 - 4/26/2024**
- Wrote Dijkstra's Algorithm from scratch in C++ and had to learn how to implement a BFS, Queue, Min Heap, write efficient structs, and assemble binaries for the functionality of the program that would work on a Matrix Graph
- Learned to implement Prim's Algorithm, Makefiles, memory management with Valgrind, and debugging with GDB

Project: Zombie Conga! **11/24/2023 - 12/5/2023**
- Made a templated Linked List, along with an enum "zombie" class for the list, and then a set of methods of a "conga line" class capable of manipulating the Linked List to change, add, or remove members
- Worked with a templated linked list, an overloaded operand, an enum class, a custom struct, complex abstraction, encapsulation, pass by reference, and clean memory management along with many useful C / C++ methods

Project: TensorFlow Models and Learning **08/24/2024 - Present**
- Currently learning how to train, improve, and code machine learning models using the Keras and TensorFlow library
- Working on utilizing my learning process to potentially implement into Paragon Autonomous drones, and to expand my knowledge of coding relating to AI, ML, LLM, computer vision and neural network models

Introduction to Digital Logic Honors Project: Jump function in Microprocessor **11/24/2023 - 12/5/2023**
- Using the completed microprocessor I built throughout the semester, I implemented a jump command to override given instructions to the controller and successfully implemented it on an Arduino
- Implemented a new custom rom value to be passed into my controller which required me to build a more functionally complete microprocessor