PERI HASSANZADEH

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OBJECTIVE

Motivated and driven Computer Engineering Graduate Student looking for fast-paced engineering opportunities

EDUCATION

MS Electrical and Computer Engineering, University of Pittsburgh — Dec 2024
BS Computer Engineering, University of Pittsburgh — Dec 2022

SKILLS

Development	C++/C | Python | Java | VHDL | Linux
Simulation	MATLAB | Altium Designer | Fusion360 | SolidWorks | LTSpice
Other Tools	Git | Jira | Confluence | Arduino | Raspberry Pi | OpenCV

EXPERIENCE

Software Engineering Intern — May 2024 - Aug 2024
SpaceX - Starlink Product Engineering — *Hawthorne, CA*

- Developed an automated test environment to simulate and analyze Wi-Fi interference, including device driver development and **real-time** telemetry visualization
- Designed and implemented a test execution interface for technicians, transitioning from command line to an automated system service accessible across the network, improving usability and limiting user errors
- Integrated all work into the Starlink User Terminal testing repository, managed **full project life cycle** from design to maintenance, and created comprehensive documentation and user guides

Electronics Engineering Intern — May 2023 - Aug 2023
Northrop Grumman - Active Secret Clearance — *Melbourne, FL*

- Developed public-private key management tool in **Python** to assist with digitally signing source code directly contributing to patent prototype that secures and authenticates code at varying classification levels
- Tested and integrated HSMs and configured hardware setup for further interactions via APIs

Software Engineering Intern — Jun 2022 - Aug 2022
Prudential Financial — *Newark, NJ*

- Designed, developed, and tested a reusable dynamic script in Python to automate the conversion of **SQL** statements into a table-based structure by leading design sessions with key stakeholders to understand requirements
- Executed script against **7000+** SQL statements at a time from production and provided results to project team in seconds for later use in strategic testing within the new framework reducing the manual labor by hours

Undergraduate Teaching Assistant — Jan 2022 - Dec 2022
University of Pittsburgh — *Pittsburgh, PA*

- Utilize **leadership** and problem solving skills to facilitate students' understanding of course material

Software Development Intern — Jan 2021 - Dec 2021
Ansys — *Canonsburg, PA*

- Cross-platform development of multiple full stack internal tools using **Python** to support the Release Management Unit providing real-time updates on big data applications utilizing various API calls
- Developed a big data application used to parse compressed data to find specified strings amongst GB of data which reduced search time from hours to seconds

PROJECTS

Formula SAE Dec 2022 - Present

- Designed and led development of custom surface air pressure sensor board for use in verification, testing and improvement of aerodynamic subsystem design resulting in the first place innovation prize at competition
- Development of improved live vehicle telemetry module surface mount PCBs using **Altium Designer** and verify functionality in support of Live Telemetry group
- Support electronics subteam by assembling and troubleshooting CAN expansion boards responsible for communicating data from various sensors over the vehicle's CAN bus

Multi-Target Tracking Research Aug 2022 - Present

- Investigate performance analysis of target tracking applications utilizing traditional methods in C++ where sensors and algorithms are used in space environments emphasizing time and accuracy
- Meet with industry project sponsors and identify key areas of research as a member of the NSF Center for Space, High Performance, and Resilient Computing Lab

Raspberry Pi Security Camera - Edge Computing Jan 2023 - April 2023

- Created a security camera with object detection using a common machine learning algorithm pre-trained on the COCO dataset
- Communicated a live video stream over the network using **OpenCV** frames and ImageZMQ from the Raspberry Pi to a remote server to offload complex computation of the object detection

High Performance Computing Research Aug 2022 - Dec 2022

- Utilized Intel DevCloud to implement common pattern matching algorithms in **C++** serially and in parallel using OpenMP and oneTBB libraries
- Explored large scale applications of each algorithm by applying a human genome sample from the US National Library of Medicine
- Presented conclusions and results after performing analysis on collected data in terms of execution time, accuracy and parallel efficiency of each implementation

Rubik's Cube Solver Prototype – Computer Vision Aug 2022 - Dec 2022

- Worked on a team of four ECE students to create a system that solves a Rubik's cube using computer vision, a non-trivial algorithm, motor actuation and a power supply
- Utilized **OpenCV** and image transformation techniques to detect all contours, sorted for square contours and identified each color using RGB to HSV color thresholds to capture the full color state of the Rubik's Cube
- Optimized three ways to capture color state using dynamic, static, and corner capture in less than one second

Disarm-It!: Bop-it Spinoff Jan 2022 - Apr 2022

- Created a functional game similar to Bop-it using **C++** and **Arduino** for custom input sensors and controls (Keypad, Capacitive Touch Sensor and Microphone)
- Programmed a state machine for the game using a ATmega328p microcontroller

Train Control System Simulation Aug 2020 - Dec 2020

- Developed a simulation of Pittsburgh's North Shore Extension with a group of engineering students using **C++** design patterns, **Git**, **Jira** and **Qt Designer**
- Primarily responsible for calculating train routes and displaying all updated information on main control page which tracked train location, manual dispatching controls and running an input csv file schedule