HENRY LEE

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EDUCATION

B.S. Computer Science, University of Minnesota – Twin Cities
CGPA: 3.60 / 4.00 | **Technical GPA:** 3.71 / 4.00 | **Expected Graduation:** May 2021 | **Award:** Dean's List
Relevant Courses: Algorithms & Data Structure, Machine Architecture and Organizations, Operating System, Computer Network, Software Engineering, Internet Programming, Discrete Structures

EXPERIENCES

Software Engineer Intern **Intel Corporation** **May 2020 – Sep 2020**

- Coordinating with engineers in Programmable Solutions Group supporting software development life cycle.
- Reduced and automated ≈50% of weekly manual activity for operations team by developing a deep dive analysis tool.
- Optimized runtime of regtest progression tool by 40% through Perl to Python migration and algorithm refactorization.
- Developing insightful data visualizations for the automated weekly comparison tool in an Agile environment.
- Redesigned solutions architecture with effective Object-Oriented Interface to enhance scalability, extensibility and manageability.
- Implementing machine learning in Python to predict regtest progressions by correlating weekly regtest attributes resulting in a 40%-60% accuracy.

Student Software Developer **UMN Center for Filtration Research** **Jan 2020 – Present**

- Developed a full stack web application for 20+ CFR members collaborating with UMN's air filtration research
- Integrated data analysis and visualization on real-time and historical data using matplotlb.
- Reduced 73% of the loading time of 5 years historical data visualization by caching reusable data from API calls in an implemented backend SQLite3 database.
- Built REST API endpoints accessing configurable filter modeling visualization using REST Django frameworks.
- Integrated the frontend with HTML, JavaScript and the development of server with Python Django framework libraries.

Student Software Developer **Minnesota Traffic Observatory** **June 2019 – Sep 2019**

- Developed a beacon using micro-controllers working with the GPS and LTE modules in Python.
- Reduced 35% of power consumption by refactoring existing algorithm to switch power consuming modules effectively.
- Improved the readability and efficiency of existing scripts by implementing an effective Object-Oriented Interface.
- Managed the migration of code from an existing prototype in PyBoard to a new IoT Pycom development board.

PROJECTS

Personal Website (Website)

Autonomous Self Driving Car with Udacity (*Ongoing*)

- Integrated OpenCV to read frames, edges, mask Region of Interest (ROI) and determine Hough Lines for finding lanes.
- Create and train a neural network model using TFLearn with 10,000+ datasets of frames and car control-keys in Numpy

Path-Finding Visualizer (Website)

- Built React JS application for visualizing pathfinding with the implementation of 4 different pathfinding algorithms

Multiple-Client Messaging Server (Github)

- Developed a messaging server for multiple clients in C with FIFO and Poll for efficient message update.
- Simulated clients with multithreading to process incoming messages and send message concurrently.

Guide Glasses for the Blind

- Developed a pair of glasses powered with Raspberry Pi using Python to help the visually impaired individuals.
- Implemented ultrasonic and infrared sensors to detect surroundings converting information into sound vary by volume
- Applied GPS module for navigation and safety purposes with implementation of automated speech libraries.

SKILLS

LANGUAGES: Java ; Python ; C ; C++ ; OCaml ; HTML & CSS ; JavaScript ; PHP ; Perl

TECHNOLOGIES: React JS ; Python Django ; Node JS (Express) ; MySQL ; SQLite3 ; OpenCV ; TFLearn ; Raspberry PI

LEADERSHIP ROLES

State Orchestra 2nd Violin Principal & Uni Symphony Orchestra Concertmaster

High School Robotics Club President