Zach Ghera

Phone: 317.525.3649

Email: zachary.ghera@gmail.com

https://github.com/zghera

13060 New Britton Dr.

Fishers, IN 46038

https://www.linkedin.com/in/zghera/

EDUCATION

Purdue University, West Lafayette, Indiana   (August 2018 - May 2022)
- Bachelor of Science in Honors Computer Engineering | GPA: 4.0 | Stamps Family Charitable Foundation Scholar
- *Relevant Courses*: Data Structures & Algorithms, Adv C Programming, Computer Security, Python for Data Science, Intro Digital System Design, Analog Circuit Analysis and Lab I & II, Honors Engineering Design I & II

WORK EXPERIENCE

Google - Incoming Chrome Security Intern

Bellevue, Washington   (May 2020 - August 2020)

Google - Cloud Intern

Sunnyvale, California   (May 2019 - August 2019)

Optimized core database implementation of Sawmill Logs, an exabyte scale data lake that supports internal analytics.
- Developed and tested a reusable API for Zstd dictionary compression in C++ and applied it to the primary storage format for Google logs database. This minimized compression overhead on small data by training dictionaries for certain log types with structured data.
- Created performance benchmarking tool to measure the benefits of the new design. Analyzed and visualized the performance results using Python and SQL.
- Improved the compression ratio by 10-15% for various log storage types with minimal performance reductions.

Google - Computer Science Summer Institute Student

Kirkland, Washington   (July 2018 - August 2018)

Learned & utilized Python, HTML/CSS, JavaScript, Google App Engine, & various Google APIs over a 3-week period
- Developed the back-end for CollegeConnect, a web application that allows students to connect and collaborate.
- Integrated Google Datastore to store profile info. and Google Calendar & Maps APIs to create Connect Events.

RELEVANT PROJECTS

Autonomous Motorsports Purdue – *Software Lead*   (July 2019 – Present)
- Re-designed system structure & corresponding launch files for use of LiDAR based SLAM pkg (HectorMapping).
- Designed, implemented, and tested (in RViz simulation) the goal setting algorithm for ROS Navigation input.
- Developed the initial vision, mission, strategy and project management structure for the organization.

IEEE: **Remotely Operated underwater Vehicle (ROV)** – *Software Team*   (September 2018 – May 2019)
- Developed Python ROS node that subscribed to a camera feed of an unknown path, performed image recognition (filtering, moment identification, line transforms, etc.), & published control output to a ROS topic.

Engineering Design – *Robotic Systems Project Lead*   (September 2018 – May 2019)
- Designed a small-scale prototype robot to autonomously and efficiently "transport material on Mars".
- Created custom control algorithm in Python for path navigation, maneuvering, & cargo delivery systems.
- Developed SLAM algorithm in Python for robot tasked to traverse and map a maze while avoiding hazards.

TECHNICAL SKILLS

- Most Proficient: C, C++, Python, ROS
- Familiar: Git, OpenCV (Computer Vision), Java, MATLAB, HTML/CSS, Basic Linux/Unix, Google App Engine

AWARDS/HONORS

- Dean's List 2018-2020
- Alpha Lambda Delta & Phi Eta Sigma Honors Societies
- AP Scholar with Distinction & National Hispanic Merit Scholar
- Richard Crosser Memorial Scholar
- Stamps National Committee Board Member
- IUPUI Math Competition: 2nd in state individually & 2nd in team
- Notre Dame Leadership Seminar
- West Point Academy Summer Leadership Experience