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Colin Harker

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Employment

Software Engineer, Intern — **Honeywell** — *June 2021 – August 2021*

- Honeywell utilizes an internal serial bus communication network to log packet data sent between connected hardware. Sqlite studio was failing business needs in linking database table data used for debugging hardware communication. Upgrading to a custom in house software solution was necessary to remove the production block that had developed.
- Utilizing C++ and the QT framework, I was tasked with developing this application from scratch and providing the necessary groundwork for future development. The tool processes and decrypts the table data to be presented in a straightforward and understandable manner. Manual filter control and hardware packet simulation are options given to engineers as well.
- This tool is currently being used by ~100 engineers at Honeywell to assist in their development of embedded systems.

Software Developer, Intern — **GoWith (startup)** — *May 2020 – August 2020*

- GoWith is developing a mobile time-keeping app geared towards airport passengers. Using motion analysis the app calculates the time needed to go from home, through airport security to the boarding gate.
- My initial role was to migrate the app from Ionic 3 to Ionic 5. This involved assessing the codebases ~20,000 lines of code for necessary changes. With 40+ app breaking updates in changing versions, moving to Ionic 5 involved immense refactoring of navigation, updating API properties, changing utilities/ dependencies and many more.
- Separately from my work with version migration, I assisted developers in integrating Google Maps and Directions API. This is utilized to assist in processing motion analysis algorithms used in calculating wait times with an airport.

Education

Philadelphia, PA — **Temple University** — *Anticipated Graduation, May 2022*

- **Major:** Computer Science, B.S.
- **Relevant Coursework:** Software Design, Data Structures and Algorithms, Computer Systems and Low Level programming, Systems Programming and Operating Systems, UX Design, Calculus 1 and 2, Math Concepts in Computing.

Projects

Twitch Multi Viewer — *May 2021*

- On the streaming platform Twitch.tv, it is difficult to watch multiple streams of the same event. With network buffering, stream delays, on top of having to open multiple windows to view; Watching multiple stream perspectives becomes cumbersome as a consumer.
- Twitch Multi Viewer is a React web app that utilizes the Twitch.tv embedded streaming api to allow users to display multiple streams within one browser tab and sync the streams together.

Trajectory Intercept System — *June 2020*

- With a sister in the US Navy, we often have discussions about the technology she comes across on a daily basis. One that I found particularly interesting was a system that analyzes a flighted objects trajectory and discharges projectiles with the aim to intercept. Curious about the technology behind trajectory analysis and calculation, I began development on this research oriented project.
- Using C++ and motion analysis data captured with OpenCV, the Trajectory Intercept System utilizes multi-threading to analyze real-time trajectory and calculate potential future locations of an object.
- The data that is calculated can then be used to properly analyze an optimal location to intercept the object with a separate projectile.

Carson Wentz Play Percentage — *September 2021*

- In the 2021 NFL offseason the Philadelphia Eagles traded Carson Wentz to the Indianapolis Colts. In return, the Eagles will recieve a conditional first round pick in the 2022 draft. The condition is that if Wentz does not play 75% of the snaps for the Colts this season, the draft pick is changed to a second round pick.
- Carson Wentz Play Percentage allows Eagles fans to easily keep up with the progress of these trade conditions through a single page web app.
- Utilizing the NFL internal stats API, Carson Wentzs' overall play percentage for the season is displayed, showing wether the Eagles qualify for the 2022 first round pick.

Skills

- **Programming Languages:** (Intermediate) C, C++, Java.
- **Tools:** Git, Jira, Subversion, Confluence, QT.