

Carlton Wu

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EDUCATION

Rutgers University

Bachelor of Science in Computer Science

*Relevant Coursework: Data Structures, Computer Architecture, Systems Programming,
Discrete Structures I & II, Linear Algebra, Calculus I & II*

GPA: 3.94

New Brunswick, NJ

September 2021 – May 2024

EXPERIENCE

Telemetry Team Lead

Rutgers Rocket Propulsion Laboratory

September 2021 – Present

New Brunswick, NJ

- Lead the team to successful data recovery and flight analysis of two 2-stage rockets flown this year.
- Helped design and build a rocket for Spaceport America Cup, an intercollegiate rocket engineering competition for student rocketry teams. Successfully deployed and recovered an autonomous drone at an apogee of 13,000 ft. Won first place out of 160 teams for best GoPro 360 Video footage and 2nd in Design overall.
- Implemented a real-time altitude and heading reference algorithm that features quaternion computations to analytically combine data into a reference quaternion at 100hz in C++.
- Designed and manufactured a custom surface mount printed circuit board containing a NXP crossover microcontroller, MEMS sensors, and an RF radio for telemetry data up-link and down-link.

Full Stack Developer

American Institute of Aeronautics and Astronautics

September 2022 – Present

New Brunswick, NJ

- Created an application that connects to the cloud utilizing Google API to fetch data for the local database. Allows for team members to rapidly develop and push to production without intensive technical knowledge of the system.
- Produced a system that dynamically generates HTML/CSS for front-end web pages and user profiles from back-end databases. Built with a specific focus on modularity and reusability. Reduced page load times by 70%.
- Manage and oversee the development of all AIAA related websites.

Web Developer Intern

Rutgers University

September 2021 – May 2022

New Brunswick, NJ

- Maintained and updated over a dozen of websites on demand for numerous departments across campus. Uniquely curated each site with HTML/CSS to provide a better user experience.
- Migrated websites from WordPress to Drupal to give the information technology department unprecedented access to the back-end of the site.
- Refined existing front-end visual elements of the Drupal framework to increase user visual appeal.

PROJECTS

Real Time Data Visualizer | *Python, PyQt6, Git*

February 2022 - Present

- Implemented a graphical user face to visualize incoming telemetry data.
- Ran parallel filters including a Madgwick Orientation Filter to accurately estimate attitude.
- Interfaced with multiple serial devices to render real-time attitude models on a 3d graph at a rate of 15hz.

RUHappy | *Python, Flask, Anaconda, HTML/CSS, Git*

October 2021

- Designed and developed with a team of 3 members a model capable of detecting separate facial expressions leveraging machine learning algorithms in 24 hours.
- Presented and placed 2nd overall in the Social Good Track out of 76 participants.
- Built a therapeutic chat-bot that responds emotionally to user messages.

NJ MVC Appointment Locator | *Python, HTML, BeautifulSoup, Selenium, Git*

July 2021

- Created a script that scraped the NJ MVC website for appointments utilizing BeautifulSoup at 10 times a minute.
- Utilized Selenium on a Chrome webdriver to download HTML code for available appointments.
- Reduced time spent monitoring by over 95% by utilizing the script to successfully register for contested appointments.

TECHNICAL SKILLS

Languages: Python, Java, C/C++, JavaScript, HTML/CSS

Tools/Frameworks: Git, PyQt6, SQL, MatLab, NumPy, BeautifulSoup, Selenium, WordPress, Drupal