Anthony Caccese

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Education

University of Maine Orono, ME

Bachelor of Science in Computer Science, Minor in Business Administration *May 2024*

GPA: 4.0

Professional Experience

Embedded Software Engineer July 2024 – Present

United Launch Alliance (ULA) *Centennial, CO*

Worked on ground software systems supporting the launch of ULA's next-generation rockets

- Maintain and enhance critical ground software systems to support current and future launch missions
- Designed and developed a Python tool to convert ground software logs into executable test automation code
- Migrated legacy real-time message window system to a modern interface using Qt5 and C++
- Performed integrated testing with hardware-in-the-loop simulators to validate software updates
- Supported the testing and deployment of automation and diagnostic scripts across enterprise systems

Full-Stack Developer and Research Assistant Dec. 2020 – May 2024

VEMI Laboratory *Orono, Maine*

Collaborated in interdisciplinary research developing for autonomous vehicles, virtual reality, and multi-modal research

- *Fully Autonomous Vehicle Simulator*
  - Initiated development and construction of a 6 person fully autonomous vehicle simulator
  - Aided in a $ 300,000 award winning autonomous vehicle ride-sharing app
  - Developed a motion enabled simulation that calculated vehicle movement in real-time
  - Designed a virtual environment that simulated an autonomous vehicle driving through a city
  - Created an iOS application that streamed data in real-time to and from the Unity simulation using a web-socket server
- *iOS Haptics*
  - Implemented the iOS haptics system into a navigation app
  - Created a library for dynamically drawing navigation paths that are enabled with vibration
  - Utilized the accessibility features for blind and visually impaired usage
  - Used text-to-speech to inform the user of changes or updates in the route

Projects

Wireless Sensor System | *Arduino, C++, PHP, JavaScript, HTML* May 2018 – Dec. 2019

The project's goal was to create a wireless sensor network using 4G cellular communication and Zigbee so that data could be accessed via a website

- Created a wireless sensor system that stored sensor data
- Developed a website that received data from a 4G cellular device controlled by an Arduino that sent data via FTP
- Presented the wireless sensor system and ran a workshop at a program funded by the National Science Foundation

Autonomous Braking System for Rollator Walker | *Arduino, C++, PHP, JavaScript, HTML, Github* Sept. 2017 – April 2022

Researched and designed an autonomous braking system for a rollator walker

- Created a sensor system controlled by an Arduino to monitor, speed, acceleration, angle and braking force of the rollator
- Developed an acquisition system that recorded these data and stored the information to an SD card
- Wrote an approved IRB proposal for a study conducted at Phillips-Strickland House assisted living facility

Technical Skills

Languages: C/C++, Python, Bash, C#, Swift, Java, JavaScript, HTML/CSS, PHP
Frameworks: React, Node.js, Swift UIKit
Developer Tools: Git, XCode, Firebase, Unity, Blender, Unreal Engine, VS Code, Visual Studio, Arduino IDE, Eclipse
Libraries: d2l, NumPy, pytorch, OpenCV