Philip I. Kuhle

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Objective

Driven and reliable electrical engineer with a strong embedded systems engineering foundation seeking an internship position for the summer of 2024. Experience in a fast-paced startup environment and the defense industry. Particular interest in electrical hardware design, control systems, robotics, and avionics.

Education

Georgia Institute of Technology | Atlanta, GA

M.S. in Electrical and Computer Engineering	*August 2024 – May 2025*
B.S. in Electrical Engineering, GPA: 3.84	*August 2020 – May 2024*

Skills

Programming: Python, C++, C, MATLAB
Hardware: STM32, ARM mbed, oscilloscope, waveform generator, logic analyzer, soldering, digital circuits, analog circuits, FPGAs, VHDL, optical instrumentation, manual machining
Software: Altium Designer, STM32CubeMX, STM32CubeIDE, Linux developer environment, ANSYS EDT, Quartus Prime, Autodesk Inventor, Inventor CAM, Microsoft Office, Jira, Confluence
Communication: Project management, technical writing and reports, presentations

Experience

Gecko Robotics | Pittsburgh, PA   *May 2023 – August 2023*
Electrical, Firmware, and Integration Engineer Intern
- Designed a system to determine when a wall climbing robot loses magnetic adhesion to industrial assets
- Used Altium to design a four-layer PCB interfacing three hall-effect sensors and an STM32F3 microcontroller
- Wrote firmware in C to poll sensors using I2C and to send data over USB to the robot's onboard computer
- Effectively collaborated with mechanical engineers to ensure proper integration of all components
- Adhesion detection feature will be rolled out to the entire fleet of robots because of its impact on robot safety

Georgia Tech Experimental Rocketry | Atlanta, GA   *January 2023 – Present*
GNC and Avionics Engineer
- Researched IMU and GPS architectures to inform sensor selection for a rocket designed to reach space
- Modified extended Kalman filter to implement a dynamic time step to analyze flight data

AI Virtual Assistant (AVA) Lab | Atlanta, GA   *January 2022 – July 2022*
Undergraduate Research Assistant
- Researched under Dr. Larry Heck to develop a digital humanoid virtual assistant
- Contributed to implementation of a pipeline to generate realistic facial animations on a digital avatar given a speech input using Python
- Developed a web service to stream .mp4 files to view facial animations in real time using NGINX
- Work being used to develop the realistic avatar of a next-generation virtual assistant

Georgia Tech Research Institute | Atlanta, GA   *May 2021 – July 2021*
Optical Engineer Intern
- Engineered an optical system to perform homodyne scanning holography, a form of digital holography
- Led construction of an interferometer to generate a Fresnel zone plate (FZP) interference pattern with adjustable frequency to be scanned over an object
- Controlled a motorized two-axis mirror using MATLAB to automatically adjust scanning region size, collect and organize voltage data, and digitally reconstruct the object point-by-point
- Results used to test if homodyne scanning holography could be used in a concept LiDAR system