Cole Rottenberg

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Education

University of Florida May 2025
Bachelor of Science in Computer Engineering *Current GPA: 3.52/4.0*
Lake Highland Preparatory School June 2020
GPA: 4.3/4.0

Relevant Coursework

Courses: Data Structures and Algorithms, Digital Logic, Microprocessor Applications, Signals and Systems, Circuits 1, Computational Linear Algebra, Data Science for ECE

Skills

Languages: C/C++, Java, Python, MATLAB, Rust, LaTeX
Skills: Git/GitHub, Linux, Vim

Libraries: pandas, NumPy, Matplotlib, FreeRTOS, ESP-IDF

Projects

Real-time IMU Data Streaming via DMA & UART | *C, C++, ASM* May 2023

- Enable low latency access to IMU data through DMA coprocessor freeing CPU
- Ran CPU in sync with software enabled DMA transfers
- Redesigned data transfers architecture allowing an order of magnitude increase in speed
- Pipelined IMU data over high-speed UART stream via hardware interrupts

ClubHub | *Go, TypeScript, Angular, RESTful API, Git* March 2023

- Designed and implemented a comprehensive suite of RESTful APIs, streamlining data exchange and enhancing the user experience.
- Developed a custom hashmap-based cache, achieving an accelerated club and account lookup times by a factor of 2 with frequent checks.
- Worked closely with front-end developers to ensure seamless data integration and back-end project management matched front-end.

Audio Clarity Enhancement | *MATLAB, FFT* November 2023

- Analyzed corrupted audio files to detect frequency bands of corruption on a frequency domain.
- Developed precise band-pass filters tailored to isolate and amplify the target frequency range, effectively suppressing unwanted noise and interference.
- Successfully retrieved obscured messages from corrupted audio, enabling clear comprehension for listeners.

Experience

Florida Cryptocurrency and Alternative Assets Club | *Treasurer* Jan. 2022 – Present
Lead topic discussions on the cutting edge applications and research within blockchain research

AlgoGators | *Quantitative Researcher* August 2023 – Present
Help lead quantitative research and algorithm development for algorithmic futures trading strategies

Blue Vigil | *Intern* June 2023 – August 2023
Developed communication protocols for data transfer over RS-485 in electrically noisy environments. Implemented Reed Solomon Error-correction code alleviating communication faults due to corruption. Built fault warning systems within commercial drone lighting system on ESP-32s