Benjamin Rotker

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SUMMARY

Detail-oriented Computer Engineering graduate from the Commonwealth Honors College at UMass Amherst. Hard worker with hands-on experience in embedded software development, troubleshooting and optimization.

SKILLS

C, Linux, Java, Python, MATLAB, Arduino, Verilog, Soldering, KiCad, LTspice, Microsoft Suite

EDUCATION

University of Massachusetts Amherst May 2023
Bachelor of Science in Computer Engineering GPA: 3.6
Commonwealth Honors College, Dean's list
Coursework: Abstract Data Structures with Java, Discrete Mathematics, Embedded Systems Lab, Security Engineering, Hardware Design, Communication Systems, Digital Signal Processing, Systems Programming

RELEVANT PROJECTS

Honors Thesis Project Fall 2022 -Spring 2023

- Trained a machine learning model for automated truncation of lecture recording audio
- Applied Comet_ml and Librosa Python libraries to extract MFCC, MCME, and ZCR features
- Evaluated efficacy of each feature in identifying unwanted sounds by creating benchmark tests
- Implemented a support vector machine for audio classification using these features
- Defended 43-page thesis paper and research results in front of faculty board at honors exhibition

Senior Design Project Fall 2022 – Spring 2023

- Determined quantitative system specifications that were demonstrated to faculty evaluators
- Designed an electric guitar effects system with Teensy 4.1 MCU and various integrated circuits
- Managed budget, scheduled meetings, and assigned team members weekly tasks as logistics lead
- Debugged ADC/DAC and tested SNR and THD with oscilloscope and spectrum analyzer
- Gained experience in noise reduction, low-power embedded system programming, and PCB design

Low Power Embedded Systems Project Spring 2023

- Developed a low power consumption, solar powered sensing application with a TI energy harvesting chip
- Programmed an ESP32 MCU to communicate with the TI chip and light different LEDs given sensor data
- Modified hardware on the energy harvesting circuit board to output 3.6 volts at milliamps of current

LEADERSHIP & ACTIVITIES

UMass Dance Marathon
Volunteer Fall 2018 – Spring 2023

- Promoted events and raised funds for Baystate Children's Hospital for five consecutive years

Director of Alumni Relations Fall 2022 – Spring 2023

- Coordinated networking events, maintained contact database, and oversaw Facebook group

WORK EXPERIENCE

The Chatham Squire Summer 2021 - Present
Bartender

- Greeted customers with enthusiasm and practiced friendly, attentive, and quick customer service
- Developed strong social and communication skills through countless interactions with customers
- Produced over $12,500 of sales volume in a single night in an intense, fast-paced environment
- Practiced teamwork and communication with coworkers to handle busy shifts with minimal mistakes