Henry J. Kroeger

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EDUCATION

University of Southern California, Viterbi School of Engineering Los Angeles, CA

B.S. Computer Engineering & Computer Science (Embedded Systems) May 2022

Honors: Mork Full-Tuition Academic Scholarship, Viterbi Fellow Scholarship, Dean's List   GPA: 3.96

Relevant Coursework: Distributed Systems for IoT, Data Structures & Object-Oriented Design, Digital Circuits, Linear Circuits, Embedded Systems

EXPERIENCE

USC Integrated Medical Electronics Lab Los Angeles, CA

Undergraduate Researcher October 2018 – May 2020

- Led a team of 3 undergraduates to design, build, and test a universal backend for commercial and in-house neural-computer interfaces.
- Designed a multilayered PCB to amplify, aggregate, and digitize neural signals received from an array of 32 electrodes.
- Assisted in the programing of a FPGA to control neural recording microchips and process digitized neural impulses.
- Built a custom Arduino-based test suite to verify the operation of the interface backend.

The Number Project Chicago, IL

Summer Intern June 2018 – August 2018, June 2019 – August 2019

- Developed a digital asset management system which reduced the time required to create event pitches by 50%.
- Planned and executed over 5 high-profile corporate activations at prestigious Chicago events including Lollapalooza and ComplexCon.

PROJECTS

Office Light Sensor IoT System

- Constructed an IoT system using battery-powered sensor nodes and a centralized server to determine overhead light usage in an office.
- Deployed multithreaded RIOT OS-based light sensors to record changes in room lighting and publish the results to a remote server using MQTT messaging.
- Created a backend web server to access the light data remotely using RESTful design principles.

Arduino Rangefinder

- Built an Arduino-based rangefinder to accurately measure short distances using ultrasonic waves and output the results to an LED display.

LEADERSHIP & INVOLVEMENT

Kappa Sigma, Delta-Eta Chapter Los Angeles, CA

Rush/Recruitment Chair May 2019 – Present

- Coordinated recruitment events for over 1,000 potential new members and 100 active members.
- Managed a $25k budget to recruit 75% more new members than prior years while spending 20% less.

SKILLS

Technical Skills: C++, C, Python, Verilog, HTML, LTspice, MATLAB, Linux, Microsoft Office, GSuite, Git, Technical Writing