JOSEPHINE KING

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EXPERIENCE

ASIC Engineering Intern

Juniper Networks May – Aug 2019 Sunnyvale, CA

- Worked on and learned a new ASIC verification technique which has the potential to be faster and easier to learn.
- Gained experience in ASIC verification and SystemVerilog, and OOP.

Phase Change Memory Researcher

Harvey Mudd College May – Aug 2018 Claremont, CA

- Used Verilog-A to develop models of a phase change memory material and a selector diode that adhere to experimental data.
- Simulated phase change memory arrays up to 100 X 100 cells using HSPICE circuit simulator, quantified how selector diodes limit array size.

X-Ray Fluorescence Spectroscopy Researcher

Mount Holyoke College June – Aug 2017 South Hadley, MA

- Created test apparatus and collected XRF spectra for hundreds of geo. samples. Created calibrations for spectra using multivariate analysis.
- Wrote three publications on the potential applications of handheld XRFs in planetary science. (Lunar and Planetary Science Conference, 2018)

PROJECTS

Smoke Detection

Meggitt PLC Team of 4-5 Sep 2019 – May 2020

- Fall team leader, acted as main point of contact with Meggitt liaisons, organized and directed team.
- Fall: designed and created a test apparatus, researched technologies such as Raman spectroscopy and sensor arrays with machine learning.
- Spring: calibrate analog sensors, create PCB, test prototypes.

LED Rubik's Cube

Harvey Mudd College Team of 2 Nov - Dec 2019

- Successfully created LED Rubik's cube using six 8-by-8 RGB LED matrices, a microcontroller, and an FPGA.
- Microcontroller read user input from buttons and rotary encoder, performed rotation of cube, and sent cube orientation to FPGA over SPI. FPGA programmed all six LED matrices with one output pin.

Arm Movement Telerehabilitation

City of Hope Team of 5 Sep - Dec 2018

- Designed and built an affordable arm-movement sensing device to assist breast cancer patients with rehabilitation.
- Solution was a wearable sleeve with IMU sensors and a mobile app. The device analyzed IMU data to obtain patient's range of motion and posture.

Autonomous Underwater Vehicle

Harvey Mudd College Team of 4 Mar - May 2018

- Built an underwater robot that used microphones to navigate to an acoustic beacon, measured temperature and turbidity.
- Designed analog filters, used oscilloscope to test and calibrate sensors.

EDUCATION

B.Sc. in Engineering

Harvey Mudd College

Sep 2016 – May 2020

GPA: 3.84/4.0, Top 1/8th of Class

SKILLS

Engineering Areas: Signal Processing, Digital Logic Design and Simulation, Embedded Systems, OOP, Classic & Modern Control, Analog Circuit Simulation

Tools and Software: Oscilloscope, Function Generator, Multimeter, Soldering, ModelSim, Quartus Prime, Microsoft Office

Other: Organization, Leadership, Teamwork, Writing, Work Ethic

PROGRAMMING/HDL

Proficient: C/C++, Python, SystemVerilog, MATLAB

Knowledgable: Verilog-A, HSPICE, Assembly

COURSEWORK

Microprocessor-Based Systems
Digital Elec. and Comp. Engineering
Optimization Techniques in Eng. Design
Intro to Analog Circuit Design
Data Structures/Program Development
Advanced Systems Eng. I (Signals)
Advanced Systems Eng. II (Controls)

In Progress: Systems Simulation, Advanced Analog Circuit Design

AWARDS & ACTIVITIES

Tau Beta Pi Engr. Honor Society
Harvey S. Mudd Merit Award
ARCS Scholar
Digital and Comp. Eng. Lab Tutor
Systems Eng. Lab Proctor