SARAH BROWN

Computer Engineer

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sarahbrown.github.io

EDUCATION

M.S. in Electrical and Computer Engineering	University of Oklahoma	Fall 2022	**GPA: 4.0**
B.S. in Computer Engineering	University of Oklahoma	2017 – Fall 2021	**GPA: 3.89**
B.A. in Mathematics	University of Oklahoma	2017 – Fall 2021	**GPA: 3.89**
Study Abroad	OU @ Oxford	Summer 2018	
Associates of Science	Lone Star College	May 2017	**GPA: 4.0**

WORK EXPERIENCE

University of Oklahoma - Teaching Assistant — Remote — Fall 2020 - Fall 2022

- Assisted graduate and undergraduate sections of Digital Design, Computer Architecture, and FPGA Design
- Provided students assistance during office hours and lab sessions as well as graded assignments
- Developed labs and code for ESP32s/Arduinos so students could complete Digital Design labs remotely
- Hosted remote lab sections with 10-20 students per section providing real-time problem resolution
- Redesigned Digital Design course to improve hands-on learning and improve retention in the ECE majors

Gecko Robotics - Electrical Engineering Intern — Remote — Summer 2020

- Developed methods to contactlessly detect defects on tank floors and researched various methods of 3D reconstruction
- Rapidly learned about previously unfamiliar skills including Python and OpenCV

INVOLVEMENT

Sooner Competitive Robotics — President, Secretary — 2018-2022

- Leader in an organization of 30+ students in the mission of building winning robots
- Organized events on campus for outreach and recruiting
- Developed particle filter system used to make robot heading converge for IGVC 2021-2022 competition
- SCR Team Captain - Mercury Remote Robot Challenge — 2019-2020
  - Lead a team of 20 students on different subteams toward competing in a telecommunications robotics challenge
  - Worked with members to develop autonomous subroutines
  - Implemented technology to correctly identify an object emitting a 10 Hz pulse among four different objects

Women in Electrical and Computer Engineering — President, Vice President — 2017-2022

- Planned activities and events for students in the college of Electrical and Computer Engineering
- Focused on outreach to and retainment of women within these majors and taught skills necessary to excel in classes

HAM Radio — 2012-Present

- Earned highest level HAM Radio license (Extra)

PROJECTS

Game Development — Series of personal projects to learn game tools like Godot, Aseprite, and Adobe Animate
FPGA Neural Network — A FPGA implementation of a simple neural network to identify numbers trained on the MNIST dataset
Particle Filters and Robotics — Particle filter implementation to localize a small robot on a map
Camera Notification of Event — U-Net convolutional neural network model to create an alert for when the mail is about to arrive
Computer Vision Number Recognition — Filtering techniques to recognize numbers on physical dice and display the result
Honors Research Internship — Generated a current state of the art report for Search and Rescue Robotics

SKILLS

Hardware Design:	FPGA, Verilog, Altium Designer, EAGLE, KiCad, Multisim
Platforms:	ESP32, Arduino, Raspberry Pi, mbed, Linux, Windows
Programming:	Python, C, C++, Java, R, Matlab, OpenCV, Pytorch, Tensorflow, Pandas, Numpy, SQLite
Other:	Blender, Godot, Adobe Animate, Adobe After Effects, Git, HTML, JavaScript, CSS, LaTeX

HONORS & AWARDS

- ECE Directors Service Award
- ECE Outstanding Leadership Award
- ECE Distinguished Mentor Award
- National Merit Scholar
- Girl Scouts Bronze, Silver, Gold Awards