Simranpreet Kaur

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Education

University of California, Santa Cruz Sept 2019 - June 2024

Bachelor's of Science in Computer Engineering with a concentration in Robotics
Minor in Electrical Engineering and Computer Science

Work Experience

Epirus June 2023 - August 2023
FPGA Intern Torrance, CA

- Developed error correcting codes using the Hamming Algorithm for the company's product in Verilog
- Simulated Verilog code using QuestaSim and debug by creating testbenches using VUnit
- Modified company's existing Python testing scripts and Verilog files to incorporate error correction codes during SPI data transfers

Computer Architecture, CSE120 Oct 2022 - December 2022
Grader Learning Support Services, UCSC

- Graded student work which included homework, papers, laboratory reports, and exams for the computer architecture course
- Worked closely with the course's professor and TA to ensure grading deadlines and criteria are met

Baskin Engineering Lab Support Sept 2021 - Apr 2022
Student Technician Baskin School of Engineering, UCSC

- Provided instructional support for the BSOE receiving, electronics stockroom, and lab operations
- Assembled and sold electronic component kits for courses to students and administration
- Relocate, image, and troubleshoot computers, test equipment such as microcontrollers and oscilloscopes

Projects

Autonomous Robot April 2023 - June 2023
Electrical Engineer Mechatronics Project

- Designed, prototyped, and soldered sensing circuits using bandpass filters that detected beacons of exactly 1.5kHz and 2kHz frequency while rejecting other frequency signals up to 8 feet away
- Electrical lead of the team to construct an independent robot that can navigate a standardized field with efficiency and robustness, locate the goal location, and shoot the ping-pong ball into the goal

Battleship March 2023
Verilog Logic Design

- Created an interactive, object-oriented game in Verilog with dynamic visuals on a VGA monitor with the help of state machines
- Used a Basys3 FPGA development board to control the desired movement of the object and to display the game score on a 7 segment display

Testing Autonomous Vehicles Sep 2022 - Dec 2022
Research Student Prof. Jim Whitehead

- Tested the behavior and efficiency of autonomous vehicles, in Python, when models of artificial intelligence pedestrians are put in various testing environments such as Apollo and Carla
- Created roads, models, buildings and other real life street objects using Python scripts in Blender

Skills

Programming languages: Python, Verilog, C++
Electrical Skills: FPGA Design Tools, Analog and Digital Circuits, Electrical Schematics, Oscilloscopes
Tools/Libraries: Git/GitHub, LaTeX, Matlab, Matplotlib, QuestaSim, Vivado, Blender, VUnit
Personal Skills: Team Collaboration, Complex Problem Solving, Presentation Skills