KUNAL BUTY

COMPUTER ENGINEER

✉ Kunalb3@gmail.com   ☐ (213) 285-3090   ◉ 1510 Stanford, Irvine, CA 92612

EDUCATION

University of California Irvine ▪ BS Computer Engineering ▪ September 2017 – June 2021

SKILLS

Circuit analysis, C++, C, Java, Python, CUDA, GitHub, Linux, Unity

PROJECTS

Autonomous Drone Swarm Research (Dean's Choice Award Nominee)
➢ Designed and simulated a system of drones that can autonomously navigate an area in real time without any collisions.
➢ Wrote an algorithm based on RRT* in **C++** and optimized it through the use of multivariable calculus and linear algebra
➢ Used AirSim with Unreal Engine to simulate and test drone path-finding algorithms
➢ Used JIRA to document/assign tasks and implement an agile workflow
➢ Created comprehensive test plan to find bugs/unhandled edge cases

MIPS 32 Pipelined Processor with Branch Prediction
➢ Used **Verilog** and Vivado to implement a MIPS 32 Processor
➢ Created data path and control path to allow instructions to function, including lw, sw, beq, and jump
➢ Built testbenches to debug the processor using simulated waveforms to validate outputs
➢ Optimized the processor by implementing a functional pipeline, branch prediction, and hazard detection

Solar Car
➢ Led the telemetry team of UCI's Solar Car while building a renewable energy vehicle powered by solar energy
➢ Used CAN to communicate across various car modules, including the battery, motors, MPPT and dashboard
➢ Built and designed protocols to send/receive data from the solar car as well as a Java application to visualize the data in real time

EMPLOYMENT

Panasonic Avionics   *October 2021 – Present*
Systems Engineer (contract) ▪ Lake Forest, California
➢ Integrated hardware and software components for Panasonic's In-Flight Entertainment systems
➢ Used Linux command-line to navigate through various systems and install/update software
➢ Created and executed comprehensive test plans for end-to-end testing

JoyRun, Inc.   *June 2019 – Sept 2019*
Software QA Engineer Intern ▪ Redwood City, California
➢ Single-handedly organized and executed the entire QA testing process for the JoyRun Restaurant App
➢ Found and reported over 300 bugs in the JoyRun Restaurant App
➢ Wrote MySQL database queries to unit test new or updated features in the app
➢ Used agile software to assign tasks and bug fixes to various team members

Awards

➢ Dean's Honor List (x6) for attaining a high GPA
➢ Dean's Choice Award Nominee for Autonomous Drone Swarm Research
➢ MIX Award of Excellence for managing the MIX Club as Vice President