Abhinav Subramanian

Electrical Engineering Major

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Objective: Seeking a full-time position starting after May 2021 with a primary interest in data science and FPGAs.

Education

Texas A&M University - College Station, TX   B.S. Graduation Date: May 2021

- Overall GPA: 3.86
- Majoring in Electrical Engineering.
- Minoring in Computer Science and Mathematics.

Relevant Classwork Completed: Intro to Programming Concepts, Data Structures and Algorithms, Discrete Mathematics, Digital Logic Design, Circuit Theory, Random Signals and Systems, Computer Architecture, Electronics, Electromagnetism, Optimization, Signals and Systems, Microprocessor Systems Design, Digital IC Design, Intro to Operating Systems, Electrical Properties of Materials, Fundamentals of Networking, Cryptography, Electrical Engineering Senior Capstone I, Electrical Engineering Senior Capstone II (Current), FPGA Information Processing Systems (Current), Computer and Wireless Networks (Current)

Work Experience

Intel Corporation – Hillsboro, OR (Remote)   May 2020 – August 2020
Soft IP (SIP) Qualification/Clocking Intern

- Wrote a C shell script to automate synthesis design flows, as well as a crontab to run the script and flow at a predetermined time every day
- Mapped TCL constraints to Synopsys Design Constraint (SDC) format using the Fishtail EDA tool
- Worked with other members of the DS4 team to simplify a spreadsheet containing various clock parameters

Samsung Austin R&D Center (SARC) – Austin, TX   June 2019 – August 2019
RTL Power Intern

- Used Plotly's Dash API and Python's Pandas library to develop an interactive app that shows visualizations of RTL power simulation reports in the form of various tables, graphs and other illustrations
- Implemented a series of callbacks using dropdown menus and buttons within the app to change the data being displayed
- Enabled members of the team to pinpoint areas of high power usage more efficiently

Texas A&M University – College Station, TX   August 2018 – December 2020
Undergraduate Teaching Assistant

- Taught ENGR 102 (ENGR Computing Lab I) in Fall 2019 and Fall 2020, ENGR 216 (Experimental Physics Lab I) in Spring 2019/2020, and CLEN 289 (Freshman seminar) in Fall 2018
- Expanded students' knowledge of computer programming, the Python programming language, and Newtonian mechanics
- Assisted students both inside and outside of class and graded assignments

Projects

Automated Luggage Carrier   August 2020 – present

- Working in a team of four people to develop a luggage cart capable of carrying 50kg of luggage through a crowded airport while following the user and avoiding obstacles
- Includes a tagging system so the luggage can be tracked throughout the airport
- Wrote a Python script that runs on a Raspberry Pi, uses OpenCV color tracking to track the user's position using a camera and interface with ultrasonic sensors to move the luggage cart accordingly

Blessings Bot   April 2020 – present

- Chatbot for the Discord group chat platform implemented using Python's Discord.py and Pandas APIs
- Capable of performing administrative roles within a group chat (banning members, changing members' names, etc.)
- Also capable of participating in minigames with members of a group chat (currently supports Rock Paper Scissors, Mancala and Hangman)
- Hosted on a Raspberry Pi 4

ARMv8 Single Cycle Processor   April 2019

- Written in Verilog to execute instructions in the ARMv8 ISA
- Can execute the following instructions: ADD (both R- and I-type), SUB (both R- and I-type), bitwise AND (R-type only), bitwise ORR (R-type only), Branch if Zero, Unconditional Branch, Move with Shift, Load into Register and Store into Memory
- Employs use of self-coded ALU, Sign Extender, Control Block, Register file and Next PC modules

Skills/Knowledge

Software:	Linux, C/C++, Python, ARMv8 assembly, Debugging (GDB), MATLAB, Java, Shell (C and Bash)
Hardware/EDA:	Verilog, Xilinx Vivado, Synopsys VCS, NI Multisim, Cadence Virtuoso, Raspberry Pi, Fishtail, Synopsys Fusion Compiler
Soft Skills:	Leadership, Teamwork, Adaptability
Languages:	English (Native), Spanish (working proficiency in writing and speaking), Tamil (working proficiency in speaking), Korean (Limited working proficiency speaking and writing)

Organizations

Institute of Electrical and Electronics Engineers   January 2018 – present

Korean Media Association   August 2017 – May 2020
Positions held: Social Coordinator (2018 – 2019), Vice President (2019 – 2020)

Taiwanese-American Student Association   August 2018 – February 2020
Positions held: Event Coordinator (2019-2020)

Awards and Recognitions

Dean's Honor Roll   December 2017 – present