

Abhinav Subramanian

Electrical Engineering Major

Address: 10000 Dianella Lane, Austin, TX 78759 | **Phone:** (971) 645-0183 | **Email:** asubramanian1219@gmail.com | **Personal Website:** abronovi.ch

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

Education

Texas A&M University - College Station, TX

B.S. Graduation Date: May 2021

- Overall GPA: 3.82/4.0
- Majoring in Electrical Engineering.
- Minor 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, Optimization for ECE, Signals and Systems, Microprocessor Systems Design, Digital IC Design, Intro to Operating Systems, Fundamentals of Networking, Cryptography, Electrical Engineering Senior Capstone (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
- Automation helped eliminate the need to manually setup, kickoff and monitor synthesis
- Mapped TCL constraints for various IP blocks to Synopsys Design Constraint (SDC) format using the Fishtail EDA tool

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 so that action could be taken to handle them

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
- Mentored students both inside and outside of class
- Assisted in grading assignments

Projects

Automated Luggage Carrier (Senior project)

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 that uses GPS and cellular data to communicate with companion mobile app so the luggage's location can be visualized on a map
- Wrote a Python script that runs on a Raspberry Pi to have the luggage cart follow around a unique QR code identifying the user while avoiding obstacles along the way

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 functions within a group chat
- 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
- Designed ALU, Sign Extender, Control Block, Register file and Next PC modules and linked them all together in a high-level Verilog module
- Executes program placed in instruction memory module

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 (Familiar), FPGAs (Zybo Zynq-7010)
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