

Hunter A. Britton

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Education

Texas A&M University | College Station, TX

Bachelor of Science in Electrical Engineering

Major GPA: 3.0

August 2019

Expected Graduation December 2023

Relevant Coursework: Microelectric Circuit Fabrication, Microelectric Device Design, Digital Integrated Design

Skills

Programming: Python, C, C++, Verilog

Hardware: FPGAs, oscilloscope

Software: LabVIEW, SolidWorks, Vivado, DS-5, ZSim, Microsoft Office Suite, KiCad, Cadence Virtuoso, Cadence Synopsis

Organizations: IEEE National Member, TAMU Sounding Rocketry Team

Experience

Texas A&M Engineering | College Station, TX

January 2022 - Present

Engineering Assistant Teacher

- Led labs for engineering students to further knowledge of electricity and magnetism
- Helped students navigate and learn data acquisition using various lab equipment and a Linux system.
- Held office hours to help solidify the students' understandings of the lab materials and data acquisition.

Projects

Single Cycle Processor

ECEN 350: Computer Architecture and Design

Spring 2022

- Designed individual modules to emulate a single cycle processor using Verilog
- Created testbenches in Verilog to verify that the individual modules of the processor worked as intended and met the edge cases
- Processor was able to execute ARMv8 programs as they would on an ARM single cycle processor

Traffic Light in Verilog

Fall 2020

ECEN 248: Intro to Digital Systems Design

- Utilized Vivado to design and program a time-based traffic light in Verilog to model the light changes on an FPGA development board

Three-Dimensional Electric Flux and Electric Field Model

ECEN 322: Electric and Magnetic Fields

Spring 2022

- Wrote a program in MatLab to compute and plot the electric fields of point charges in a three-dimensional area, as well as compute the flux on one side of the cube

UAV Design

Spring 2021

AERO 201: Intro to Flight

- Worked with fellow Aerospace undergrads to design a UAV using Solidworks and to test the UAV in a low-speed wind tunnel to determine flight characteristics within specified constraints in a competitive environment with other class members

Logic Board Redesign

Fall 2022

TAMU Sounding Rocketry Team

- Reduced previous logic board by a factor of 56% to fit into the new 6-inch body tube
- Changed from 12 Volt power to 24 Volt power and included voltage dividers to ensure the proper voltage got to the ICs
- Wrote a python script to take a kicad_mod file and scale it according to user input since KiCad does not have a native scaler as well as determine the maximum area possible while still fitting into the electronics bay

Cache Replacement Policy Simulations

Fall 2022

Advanced Computer Architecture Term Project

- Programmed a Static Re-Replacement Interval Policy, as well as an Expected Hit Counter Cache Replacement policy based on *High Performance Cache Replacement Using Re-Reference Interval Prediction* and *Cache Replacement Policy Based on Expected Hit Count*
- Used Zsim to run SPEC and PARSEC benchmarks on a westmere four core processor
- Compared the cache replacement intervals to a LRU and LFU cache replacement policy and found a similar replacement interval percentage as lined out in the referenced papers