

# VIC FREDERICK

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## EDUCATION

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### The University of Texas at Austin

Master of Science in Electrical Engineering

May 2022

Bachelor of Science, Electrical and Computer Engineering GPA: 3.48/4.00

May 2020

## EXPERIENCE

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### Power Electronics Intern – Lockheed Martin

May 2019 – August 2019

- Designed high density power supply
- Simulated analog power controller with cycle-by-cycle current limiting and slop compensation
- Tested subsystems of power train creating test modules and testing modules

### Instrumentation Intern – Bray Controls

May 2018 – August 2018

- Designed embedded sensor package in Altium to sample, process, and communicate six different metrics
- Characterized sensors through testing and analyzed packaging in SolidWorks to maximize sensor effectiveness
- Prototyped electrical and mechanical design resulting in patent

### Development Intern – Attaq Online

May 2017 – August 2017

- Developed statistics and analytics website using React and traditional JavaScript
- Captured tournament results using third-party API, League of Legends
- Wrote development-wide updates for in-game scripting to prevent days of downtime

### Teaching Assistant for Digital Logic Design – Cockrell School of Engineering

August 2018 – August 2019

- Hosted labs and office hours focusing on Verilog
- Evaluated student work for class of 60 students

### Department Tutor – Cockrell School of Engineering

December 2017 – December 2018

- Tutored for Signals and Systems, Circuit Theory, and Embedded Systems
- Guided students through concepts like convolution, Bode plot, and sampling

## LEADERSHIP AND ACTIVITIES

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### Author – UT Austin Undergrad Math Journal

Fall 2018 – Spring 2019

- Published peer reviewed paper, *Building and Solving Differential Equations Using Circuits*
- Formatting journal using Latex collaborating with other authors

### Power Electronics and Battery Lead – Solar Vehicle Team

Summer 2017 – Fall 2018

- Designed DC power electronics supplying 120V, 12V, and 5V systems
- Tested battery cells to verify thermal and electrical characteristics
- Trained members in existing implementation and best practices

### Performer – Whistling Choir

Spring 2017 – Spring 2019

- Performed live concert in Bates Recital Hall
- Practiced music weekly in choir of 12

## SKILLS

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**Test and Measurement:** Signal Generators, Oscilloscopes, Electronic Loads, Frequency Counters, Spectrum Analyzers

**Analog Simulation:** Cadence, Multisim, LTSpice, Pspice

**Hardware Description Languages:** Verilog, VHDL

**Printed Circuit Board:** Altium, Allegro, Eagle, KiCAD, Circuit Maker

**High-Level Languages:** Python, MATLAB, JavaScript, C, LabView, C++, Java

**Python Libraries:** Numpy, Matplotlib, Tensorflow, URL Lib, Beautiful Soup

**Web Development:** React, PHP, SQL, HTML, CSS, Wordpress, Square Space

**Assembly Languages:** ARM Cortex-M, LC3, RISC-V, MIPS, TMS320C700 Digital Signal Processor

**Hardware Development:** Vivado, ModelSim

**Software Development:** Keil, Code Composer Studio, Arduino, CLion, Eclipse, STcubeMX, Adobe Dreamweaver

**Modeling:** Solidworks, Fusion

**Simulated Systems:** Software-Defined Radio, Pipelined Processor, Operational Amplifier, Pipelined SAR ADC, RF LNA and Mixer