

## EDUCATION

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### Pursuing B. S. in Computer Science – University of Texas at Austin 2018 – 2022

- Turing Scholars, Dean's Scholars honors programs
- Coursework: Data structures, discrete math, computer architecture, operating systems, linear algebra, probability
- Cumulative GPA: 4.0

## WORK EXPERIENCE

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### Software Infrastructure Intern – Bloomberg L.P. Summer 2019

- Wrote a custom **Kubernetes** controller in **Go** in order to add distributed **Tensorflow** capabilities to an internal data science computing cluster
- Integrated with **Kubeflow** components in order to support multiple distribution strategies, including **Horovod**
- Worked to train and benchmark large deep learning models in a distributed manner using my new features
- To give a talk at the October 2019 Kubeflow summit in Sunnyvale, CA on my work and results

### Systems Team Intern – Silicon Labs Summer 2018

- Developed a web application to display chip characterization data in various table and chart formats
- Written using **Python/Flask** on the backend and **Javascript/jQuery** on the frontend
- Used by employees throughout the company to view, analyze, and compare live data from an internal database

### MCU Applications Team Intern – Silicon Labs Summer 2017

- Performed embedded firmware development (**using C**) on the Silicon Labs EFM32 microcontrollers
- Created example projects to demonstrate device capabilities, including a Wireless Encrypted Voice Communication Demo that is showcased on the Silicon Labs Community Blog

### Foundry Team Intern – Silicon Labs Summer 2016

- Wrote **Python** and **VBA** scripts for data parsing, analysis, and presentation
- Performed semiconductor device measurement and characterization in the Failure Analysis lab

## EXTRACURRICULAR ACTIVITIES

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### Texas Spacecraft Laboratory ([sites.utexas.edu/tsl](https://sites.utexas.edu/tsl)) January 2019 – Present

- Member of the Seeker mission, which aims to perform real-time position and pose detection of spacecraft in orbit based on a camera feed from a satellite
- Individually created a standalone **Python** library (**SSI**) for generating synthetic training data using **Blender**
- Worked with a team on a machine learning pipeline for training and evaluating various deep computer vision models
- Seeker-1 was chosen by NASA over competing internal prototypes and will launch on a CubeSat in September 2019
- Seeker-2 was funded through Fall 2019 to continue development, particularly on pose estimation
- All of the machine learning components are open source and can be found at [github.com/autognc](https://github.com/autognc).

## PROJECTS

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### FPGA Flight Controller ([github.com/kevin3-black/fpga-flight-controller](https://github.com/kevin3-black/fpga-flight-controller)) May 2019

- A fully working quadcopter flight controller created completely from scratch using **SystemVerilog**
- Was able to fly a real custom-built drone with an onboard FPGA, gyroscope, and radio receiver

### Syntaxe ([devpost.com/software/syntaxe](https://devpost.com/software/syntaxe)) February 2019

- A smart typing trainer for aspiring programmers
- Uses **online machine learning** to determine what patterns the user struggles with and gives them syntactically valid practice code that focuses on their weak points
- Implemented with **Pytorch** on the backend and **React** on the frontend, communicating over **WebSocket**

### copykey ([devpost.com/software/copykey](https://devpost.com/software/copykey)) October 2018

- Uses **Python/OpenCV** and **OpenSCAD** to process a several-second video of a standard pin tumbler key and turn it into a 3D-printable working copy
- Resulting keys printed in cheap PLA plastic were able to open several different Master, Schlage, and Kwikset locks

### Other Projects – [kevinblack.dev](https://kevinblack.dev)

- More projects and details can be found on my personal website and portfolio