

## EDUCATION

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

2018 – 2021

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

## SKILLS

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**Languages:** Python, Java, C, C++, Go, Javascript

**Tools/Frameworks:** UNIX, Git, SciPy ecosystem (numpy, scipy, pandas, scikit-learn), OpenCV, Tensorflow, PyTorch, Kubernetes, ExpressJS, Blender, Solidworks

## 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
- Will give a talk at the 2019 Kubeflow summit in Sunnyvale, CA on my work and results

### Systems Team Intern – Silicon Labs

Summer 2018

- Created 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 – Team Lead ([sites.utexas.edu/tsl](https://sites.utexas.edu/tsl))

January 2019 – Present

- Lead for 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 on a machine learning pipeline for training and evaluating various deep computer vision models
- Our Seeker-1 software was chosen by NASA over competing internal prototypes and was deployed in September 2019
- Our team was funded through Fall 2019 to continue research and 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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### Vortex ([devpost.com/software/911-call-handler](https://devpost.com/software/911-call-handler))

September 2019

- An automated 911 call handler intended for disaster relief scenarios
- Uses natural language processing to cluster calls by incident, summarize each incident in a few words, and generate an interactive heatmap of incidents
- Deployed to a Kubernetes cluster running an Express.js and MongoDB stack

### 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

### Syntax ([devpost.com/software/syntax](https://devpost.com/software/syntax))

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

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

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