

EDUCATION

- Pursuing B. S. in Computer Science and Mathematics – University of Texas at Austin** 2018 – 2022
- Turing Scholars, Dean's Scholars honors programs
 - Selected Coursework: Data structures, algorithms, computer architecture, operating systems, linear algebra, differential equations, number theory, real analysis, advanced probability, computer vision, artificial intelligence
 - Cumulative GPA: 4.0

SKILLS

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

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

WORK EXPERIENCE

- Product Engineering Intern – Asana** Summer 2020
- Completed and launched two major full-stack features relating to Asana's Forms

- Software Infrastructure Intern – Bloomberg** Summer 2019
- Wrote a custom Kubernetes controller in Go in order to add distributed Tensorflow capabilities to an internal data science computing cluster
 - Worked to train and benchmark large deep learning models in a distributed manner using my new features
 - Gave a talk at the 2019 Kubeflow summit in Sunnyvale, CA on my work and results

- Engineering Intern – Silicon Labs** Summers 2018, 2017, 2016
- Summer 2018: Created a web application allowing employees within the company to view and analyze live updating chip characterization data
 - Summer 2017: Performed embedded firmware development on the Silicon Labs EFM32 microcontrollers, additionally creating a [Wireless Encrypted Voice Communication Demo \(link\)](#) that is showcased on the company's blog
 - Summer 2016: Worked in the failure analysis lab to perform semiconductor device measurement and characterization, as well as wrote Python and VBA scripts for data parsing, analysis, and presentation

RESEARCH

- Texas Spacecraft Laboratory – Seeker Team Lead (sites.utexas.edu/tsl)** January 2019 – Present
- The [Seeker team](#) aims to perform real-time position and orientation estimation of spacecraft based on a camera feed
 - Our Seeker-1 software was chosen by NASA over competing internal prototypes and flew on a mission September 2019
 - Individual technical contributions:
 - * Created a standalone Python library ([Starfish](#)) for generating synthetic training data using Blender that underpins our machine learning pipeline
 - * Worked on other components of the pipeline for training and evaluating various deep computer vision models
 - * Developed a custom model that achieved accurate real-time full pose estimation on a low-power embedded system
 - All of the machine learning components are open source and can be found at github.com/autognc.

OTHER PROJECTS

- FPGA Flight Controller (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

- Vortex (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

- copykey (devpost.com/software/copykey)** October 2018
- Uses OpenCV and OpenSCAD to process a 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

- Many more projects and details can be found in my portfolio