

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, probability/statistics, 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 a feature that sends a user an email receipt whenever they submit an Asana Form, involving a careful investigation of appropriate rate limiting
- Completed and launched a feature that allows users to upload a custom cover image for their Asana Form
- Worked across the entire stack, including JavaScript, TypeScript, Python, React, NodeJS, and AWS Lambda

Data Science Platform 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
- Work was accepted to the 2021 IEEE Aerospace conference

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