Kevin Black

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github.com/kevin3-black

Education

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

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

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
- Gave 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

Texas Spacecraft Laboratory – Team Lead (sites.utexas.edu/tsl) January 2019 – Present

- Lead for the Seeker mission, which aims to perform real-time position and pose estimation 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.

Projects

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

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

Syntype (devpost.com/software/syntype) February 2019

- A smart typing trainer for aspiring programmers
- Uses online machine learning to determine what patterns the user struggles with and 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

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