Brady Bolton

bradybw@vt.edu
www.github.com/BradyBolton

Education Computer Science BSc at Virginia Tech
Computational Modelling & Data Analytics BSc (Secondary Degree)
Mathematics and Statistics Minors
3.64 GPA (*Magna Cum Laude*)

Languages Golang, TypeScript/JS, C#, Python, SQL, Java, C, R, MATLAB, LaTeX, Lisp
Skills Linux, React, .NET MVC, Django/DRF, Bash/sh, SASS, Git, Docker/Docker-Compose, K8s, AWS, ADO, gRPC/proto3, Postgres, SQLServer, Snowflake, CUDA/MPI/MPICC, BACnet

Related Experience

Software Developer, Koalafi, Spring 2022-Present

- Late-stage fintech startup offering frictionless financing solutions to brick-and-mortar & ecommerce businesses
- Feature ownership for React front-ends, Golang microservices, and C# .NET MVC monoliths, from IDE to deployment (AWS, ADO, K8s), monitoring (ELK & TICK stacks, Dynatrace, Segment.io), and prod support
- Serverless development with AWS Lambda, integrating with OpenTelemetry, SQS/SNS, and Slack to drive time-sensitive business operations via event-based architecture

Software Engineering Intern, NetApp, Summer 2021

- Wrote a containerized full-stack web-app for discovering and managing switch firmware
- Requests routed through Nginx reverse-proxy and Gunicorn WSGI deployed with docker-compose
- Implemented Django + Django-Rest-Framework back-end to handle user requests in parallel using asyncio

Software Engineering Intern, Progeny Systems, Summer 2020

- Worked with microservices in a cloud-native stack implemented in Golang, proto3, and gRPC
- Troubleshooted container networks with `tcpdump`, `smcroute`, and `iptables`
- Migrated a docker-compose setup to Kubernetes using Helm

Software Engineering Co-op, Daikin Applied Americas, Spring 2020 – Summer 2020

- Building automation systems (BAS) integration testing using BACnet IP/MSTP, MODBUS, Webkit
- Used Wireshark and PCAP to investigate networking bugs on BAS systems
- Focused on Python best-practices, development, and documentation using PyTest, Cython, and Sphinx

Undergraduate Research Assistant, Socha Labs, Spring 2019 – Summer 2019

- Responsible for programming and testing servo motor controllers and data-acquisition for robotic fish
- Worked closely with faculty at the Socha Lab of Biomedical Engineering and Mechanics (BEAM) to empirically study bio-mechanical models of fish locomotion and its effect on speed and mechanical efficiency

Projects

RideChariot.app

- Uber-like app (PWA) to make ride-sharing quick and easy for Virginia Tech's fraternities
- Front-end in React with static site generation using Next.JS (targeting a Jamstack-inspired architecture)
- Dockerized back-end with a `gofiber` internal API using MongoDB, Amazon SNS, and Traefik load-balancing

My Dog Sends Me Texts

- Make-shift capacitive touch pads that my dog presses to send SMS messages to family group-chat
- Runs on an ESP8266 MCU calling Twilio's API from a local WiFi network (via MicroPython)
- Bestow animals a rudimentary vocabulary (e.g. food, treat, water, walk)

Ray Tracing with Parallel Computing

- Rendered scenes on VT's compute clusters by simulating light rays via parallel processing
- Implemented with MPI (Message Passing Interface), MPICH, and via Nvidia's CUDA platform using GPUs

Awards and Activities

ACM Programming Team	ICPC Team Honorable Mention Award (2018)
Hyperloop at Virginia Tech	Dean's List
Philosophy Club	Virtual Entities (AI Programming)