Aaron Fox
Seattle, WA 98102
aaron.m.fox3@gmail.com **859.250.5236**
Website: www.aaronfox.me **GitHub:** github.com/aaronfox

EDUCATION

J.B. Speed School of Engineering, University of Louisville, Louisville Kentucky

- **Master of Engineering in Computer Science and Engineering** *May 2021*
  - **GPA**: 4.0/4.0
- **Bachelor of Science in Computer Science and Engineering** *May 2020*
  - **GPA**: 3.943/4.0 (Highest Honors)

TECHNICAL SKILLS

- C, C++
- C#, Unity
- Python – Flask, Pandas
- MATLAB
- Java
- Gradle, Maven
- Linux, Bash
- Heroku
- Docker
- SQL/MySQL/MSSQL
- Microsoft Azure
- Android Development
- Vim/IntelliJ/Visual Studio
- Web Development – Node JS
- Embedded Systems

PROFESSIONAL EXPERIENCE

Microsoft – Azure Compute
Software Engineer II *Redmond, WA – June 2021 - Present*

- Backend engineer focusing on bootstrapping the complex datacenter infrastructure that Azure is built on top of to ensure the infrastructure is globally scalable and available, primarily working with C#, C++, and Azure technologies.
- Successfully led an 11-month project involving over 10 teams across Azure, modernizing more than 100 services to enable IPv6 support in buildouts.
- Leading the design and implementation of key global infrastructure services, including automating the rebuilding and tearing down of the datacenters that are the foundational layers of Azure, controlling tens of millions of dollars of hardware.
- Developing and creating migration strategies to smoothly transition the underlying version control systems and the domain-joined to domain-less requirements to secure and modernize those services.
- Collaborating with partner teams across Azure to plan and integrate needed software load balancers, inventory management systems, and other hardware management services into the datacenter buildout systems.

Great American Insurance Group
DevOps Team Intern *Cincinnati, OH – Summer 2016, May 2020 – May 2021*

- Designed and implemented a SAST solution across all applications hosted on the DevOps teams' on-prem cloud.
  - Collaborated with Checkmarx engineers, the organization's cloud engineers, and the Enterprise Security Group to design a Docker solution containing a Python Flask app that combined Checkmarx's security API, GitHub Enterprise, Gradle, and Maven.
  - Hosted the solution in Pivotal Cloud Foundry as part of a key security initiative for the organization, involving over 250 applications and over 300 repositories.
- Developed web service to improve the health dashboard UI for developer's code complexity using Java Code Coverage.
- Produced well-documented resources on products that I built and how to use them in the company's Center of Excellence.
- Worked and collaborated remotely with the DevOps team on their applications.

The Johns Hopkins University Applied Physics Laboratory
Computer Engineering Co-op *Laurel, MD – May 2018 - August 2018, May 2019 - August 2019*

- Researched and programmed neural/deep learning networks using TensorFlow and Keras that helped remove the need for the preprocessing of atmospheric compensation data, leading to a much more efficient overall network and saving processing time required to identify specific ground materials.
- Performed experimental infrared data analysis using MATLAB and carried out basic data science on the field data from a previous experiment to extract useful patterns in the data. Presented the findings and analysis of the patterns to the Force Projection Sector during a "brown bag" presentation.
- Worked and developed on an embedded BeagleBone system in a Linux environment to generate a specific waveform needed for a classified project.
- Obtained Secret security clearance and performed work requiring the clearance.

FacilityONE Technologies, LLC
Application Development Team Intern *Louisville, KY – January 2019 - May 2019*

Aaron Fox
Seattle, WA 98122
aaron.m.fox3@gmail.com **859.250.5236**

- Migrated backend data from MSSQL Server to MySQL and PostgreSQL using Python scripts to create the queries for migration, allowing the company to escape years of using a cumbersome database that was no longer sustainable for their development team.
- Delivered various bugs and feature requests for their UNITY web app under an Agile environment using a JIRA tracker.
- Wrote extensions for and debugged their Electron-based apps as well as its backend which used Python Pyramid.
- Updated the organization's deprecated frontend codebase and its Web Components from Google Polymer 1.0 to 3.0 and fixed several aspects of their codebase so that they were working properly with up-to-date features.

University of Louisville - Reach Ambassador
Computer Engineering Student Mentor and School Ambassador *Louisville KY – August 2017 - August 2018*

- Mentored seventy first year CSE students and guided them through their first year of college.
- Regularly met in person with each student and provided guidance and mentorship toward being a successful CSE student with respect to studying, their mental health, preparing for internships, and getting involved with organizations on campus and around Louisville.

APPLIED EXPERIENCE

Global Mamas
Software Development Volunteer *Cape Coast, Ghana – Summer 2018*

- Volunteered in Ghana for an NGO and helped create and update databases for their HR system using SQL and C#.
- Improved the NGO's infrastructure and efficiency by designing a storage system for employee performance data.

Redbird Robotics
Co-captain and Technology Manager *Louisville, KY – February 2017 - December 2020*

- Won second place in the International Aerial Robotics Competition at Georgia Tech in 2017.
- Used version control to integrate all sub-teams' work in developing on drones using the Robot Operating System library for autonomous flight control.
- Communicated with and managed all sub-teams through Slack, in-person meetings, and task management systems.

River City Rocketry
Payload Team Member *Louisville, KY – August 2018 - May 2020*

- Assisted in leading efforts toward development of an autonomous drone that served as the payload for the 2019 mission.

Course/Independent Projects
Evaluating Complex Branch Predictors *www.aaronfox.me/pdfs/Branch_Predictors.pdf*

- Designed and performed a semester-long experiment and research paper according to IEEE guidelines.
- Analyzed the performance and efficiency differences of complex branch prediction algorithms versus less complex systems using a custom-made microarchitecture design framework along with Flexus, an open-source simulation tool.

Solving NP-complete Pancake Sorting using AI *www.aaronfox.me/pdfs/Pancake_Sorting.pdf*

- After implementing several emerging aspects of AI, including the use of genetic algorithms with the Wisdom of Crowds approach and the use of greedy heuristics to solve the Traveling Salesman Problem, I collaborated with a team to solve the NP-complete Pancake Sorting Problem using a combination of the two approaches above.

Personal Website and Blog *www.aaronfox.me*

- Created using MongoDB, Express.js, NodeJS, and Bootstrap and is built and run using Heroku.

Net Neutrality Bot github.com/aaronfox/Net-Neutrality-Bot

- Placed third at Hack the Hill (Eastern Kentucky University's hackathon) by creating a bot that directly contacts and replies to representatives and senators on Twitter, advocating for Net Neutrality.

Other Hackathons github.com/aaronfox/Hello-Internet

- Other past hackathon entries include a virtual reality escape room game created at VandyHacks, a fan hub dedicated to a podcast created at RevolutionUC, and a micro-lending loans prototype designed at CatHacks 3.

AWARDS, RECOGNITION, AND OTHER ORGANIZATIONS

- **Brown Fellows Program**: One of Kentucky's premier full scholarships which includes two world travel enrichment projects which I designed: one volunteering my C#/SQL skills in Ghana and another studying mindfulness across Japan.
- **Louisville Makes Games!**: Participated in meetups and workshops to learn collaborative indie game development.
- **Association of Computing Machinery**: Participated in regular Hacking Student Interest Group meetings.
- **Tau Beta Pi**: Engineering Honor Society.