Aaron Fox
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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++
- Java
- Python
- AI Prompting/Copilot
- Platform Scalability
- Distributed Systems
- Cloud Storage
- Docker
- Heroku
- Microsoft Azure
- Datacenter Infrastructure
- Microservices
- IPv4-Reuse/IPv6 Modernization
- Architecture Design

PROFESSIONAL EXPERIENCE

Microsoft – Azure Core
Tech Lead and Software Engineer II *Redmond, WA – June 2021 - Present*

- Leading the datacenter infrastructure buildouts that Azure is built on top of across 25 engineering teams, ensuring the infrastructure is globally scalable and available, primarily working with C#, C++, and Azure technologies.
- Reduced buildout cycle time from 40 days to 2 days (95% decrease), enabling Microsoft's AI datacenter buildout goals.
- Spearheading the design and implementation of key global infrastructure services, including qualifying and automating the rebuilding and tearing down of Azure's foundational datacenters, saving $3.6M in the project's first semester of use.
- Led an 11-month project involving 12 teams across Azure to enable IPv6 support in buildouts, modernizing more than 100 foundational bootstrapping services and preparing Azure Core's infrastructure for the future.
- Collaborating with over 25 partner teams across Azure to plan and integrate new tech such as new software load balancers, modern 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 built a SAST solution for all DevOps applications using Docker, Python Flask, and Checkmarx's security API.
- Integrated the solution with GitHub Enterprise, Gradle, and Maven, and hosted it in Pivotal Cloud Foundry for 250+ apps across over 300 repositories as part of a key security initiative for the organization.
- Developed a 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.

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

- Developed neural networks with TensorFlow/Keras to automate atmospheric data preprocessing, saving processing time required to identify specific ground materials by 60%, streamlining the overall network.
- Performed infrared data analysis with MATLAB to identify patterns and presented results to entire Force Projection Sector.
- Built embedded BeagleBone systems in Linux for classified waveform generation projects.
- Obtained Secret security clearance and performed work requiring the clearance.

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

- Migrated backend data from MSSQL Server to MySQL/PostgreSQL using Python scripts, modernizing legacy systems.
- Delivered constant bug fixes and feature enhancements for their UNITY web app in an Agile/JIRA environment.
- Developed extensions for and debugged Electron-based apps and Python Pyramid backend.
- Updated and refactored frontend codebase and Web Components from Polymer 1.0 to 3.0.

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, mental health, preparing for internships, and campus involvement in and around Louisville.

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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.