Brandan Roachell

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EDUCATION

UNIVERSITY OF TENNESSEE, KNOXVILLE (UTK)

M.S. in Computer Science   January 2023 – December 2023
- Cumulative GPA: 4.00/4.00
- Relevant coursework: Natural Language Processing, Biologically-Inspired Computation, Computer Systems Organization, Operating Systems: Design and Implementation, Algorithms, Computer Graphics

B.S. in Computer Science, Honors Concentration   August 2019 – December 2022
- *Minor in Mathematics*
- Cumulative GPA: 3.98/4.00
- Relevant coursework: Software Engineering, Software Security, Systems Programming, Operating Systems, Probability and Statistics, Numerical Analysis, Data Mining and Analytics

WORK EXPERIENCE

WABTEC CORPORATION   May 2023 – Present
Software Engineering Intern III   *Erie, PA*
- Developed a web application from the ground up using Django, PostgreSQL, Bootstrap, jQuery, and Docker to replace an outdated but critical MS Access tool used internally for operational planning
- Designed and implemented a new UI that proactively addressed flaws, reducing potential user error and improving usability

COURSERA   May 2022 – August 2022
Software Engineer Intern   *Mountain View, CA (Remote)*
- Migrated a service and its dependencies from Scala to Java, including creating gRPC service definitions and protobufs; writing Spring Boot mappers and unit tests; and contributing records, clients, and API endpoints to shared libraries
- Improved the maintainability of the codebase and provided code that will also be used by software engineers working on other services and future migrations
- Effectively used metric-loggers to identify and resolve latency issues in another service that affected thousands of users

GLOBAL COMPUTING LABORATORY (GCLAB)   January 2021 – December 2022
Undergraduate Research Assistant   *Knoxville, TN*
- Investigated the reproducibility of the very first black hole images by developing a workflow from limited information using specialized imaging software to process radio wave datasets, creating Bash and Python scripts to fully automate image processing, and writing documentation for my methods
- Made the original results significantly more accessible to the public through an open-source repository and containers on Docker Hub
- 1 published poster/abstract and 1 published paper (IEEE)

UTK   Spring 2021 (UG), Fall 2021 (UG), Fall 2022 (UG), Spring 2023 (G), Fall 2023 (G)
Teaching Assistant in Computer Science   *Knoxville, TN*
- Demonstrates ability to break down complex assignments and fundamental DSA concepts to students in weekly lab sessions and office hours, contributes notes and answers to online class discussion board, and grades assignments

SKILLS

Languages: C++, C, Python, Java, HTML/CSS/JS, SQL, Bash, Assembly, Scala, Scheme, GLSL
Frameworks/Libraries: Django, Bootstrap, jQuery, gRPC, Spring Boot, React, Next.js, Tailwind CSS, WebGL2
Development: Git, Unix-like environments/commands, Docker, Jira, Datadog, Sumo Logic

ACTIVITIES AND AWARDS

VEX U COMPETITIVE ROBOTICS   August 2019 – Present
- Serves as vice president (since August 2021) with over 3 years of experience as the team's programming lead
- Wrote C++ programs that enabled custom robots to reliably perform specific tasks autonomously using sensor data, odometry, and PID control algorithms
- Manages team Git repository, instructs new recruits, delegates programming tasks, and assures functionality of all work
- **2021 VEX U Robotics World Championship**: Won both **Tournament Champion** and the **Excellence Award**, the highest award presented in the VEX Robotics Competition, for superior performance in design innovation, build quality, autonomous programming, oral communication, and documentation
- **2022 VEX U Robotics World Championship**: Won the **Think Award** in our division for reliable autonomous programming, well-documented code, and a clear programming strategy