

# Brandan Roachell

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## EDUCATION

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### 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 Graphics, Operating Systems: Design and Implementation, Computer Systems Organization, Algorithms
- 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

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### WABTEC CORPORATION

May 2023 – July 2023

#### *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- Developed a web application from the ground up using Django, PostgreSQL, Bootstrap, jQuery, and Docker to replace an outdated but critical MS Access tool used internally for operational planning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 an improved UI and proactively identified and addressed usability flaws

### 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 mappers and unit tests; and contributing records, clients, and API endpoints to shared libraries
- Utilized gRPC UI in Spring Boot and Sumo Logic logs to manually test and debug my project

### 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, writing Bash and Python scripts to fully automate image processing, and creating documentation for my methods, making 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

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**Languages:** C++, C, Python, Java, HTML/CSS/JS, SQL, Bash, Scala, Scheme, Assembly

**Frameworks:** Django, Bootstrap, jQuery, gRPC, Spring Boot, Next.js, Tailwind CSS

**Development:** Git, Unix-like environments/commands, Docker, Jira, Datadog, Sumo Logic

## ACTIVITIES AND AWARDS

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### 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