

Brandon Roachell

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Summary

Highly organized, action-oriented robotics and automation expert eager to apply my leadership skills, problem-solving abilities, and programming experience to projects in the areas of data science, AI/machine learning, or cybersecurity.

Education

B.S. Computer Science, Honors; Mathematics Minor

Fall 2019 – Expected Fall 2022

University of Tennessee, Knoxville (UTK)

GPA: 3.98/4.00

Relevant coursework:

- Software Engineering, Software Security, Systems Programming, Numerical Analysis, Data Mining and Analytics, Probability and Statistics

Skills

- | | | | |
|-----------|--------------------|-----------------|----------|
| • C/C++ | • HTML/CSS | • MIPS assembly | • LaTeX |
| • Python* | • SQL | • NASM | • MATLAB |
| • Java | • React | • Ubuntu / WSL | • Docker |
| • Git | • Django REST | • Unix shell | |
| • Bash | • Jupyter Notebook | • HPC clusters | |

*(*numpy, pandas, matplotlib, pyspark, ehtim*)

Experience

Undergraduate Research Assistant, GCLab

Knoxville, TN | January 13, 2021 – Present

- Investigates the reproducibility of the first M87 Event Horizon Telescope's groundbreaking results by using specialized software to process radio wave datasets into images, developing a workflow with limited information, and creating documentation for my methods, making the original results significantly more accessible to the public.
- Writing a paper for this work and previously compiled a poster published at the international eScience 2021.
- Assists in the development of a general-purpose *in situ* data analytics framework.

Undergraduate Teaching Assistant in Computer Science, UTK

Knoxville, TN | Spring 2021, Fall 2021

- Oversees weekly lab session and weekly assignments involving relevant coding curriculum.
- Contributes information and answers to online class discussion board on course topics.

Web Developer Intern, JustMyCities

Memphis, TN | June 18, 2019 – September 19, 2019

- Replicated over 25 mockup webpages with Bootstrap that were used for the revamping of JustMyCities' website.
- Assisted in creating customer profiles including database entries, troubleshooting, and process improvement.

Web Developer Intern, Tickets For a Cause

Memphis, TN | July 6, 2018 – August 7, 2018

- Co-developed a website using Bootstrap that would allow event organizers to donate unused event tickets to a participating charity in their area.
- Utilized Java, HTML, CSS, and MySQL to develop front-end/back-end and implement a database for accounts, user-submitted forms, and ticket uploads.

Expertise

- Vice president and 3 years' experience as programming lead for UTK's competitive VEX U Robotics team **YNOT**.
- Writes novel code in C++ that enables custom robots to autonomously perform specified tasks such as global positioning and balancing on a platform using sensor data, trigonometry, and PID control algorithms.
- Manages team GitHub repository, instructs new recruits, delegates programming tasks, assures functionality of all work.

Awards

VEX U Robotics World Championship

Collegiate-level competitive robotics format in which more than 300 teams worldwide compete in yearly design, programming, and operating challenges.

- **World Champion** (2021) Competition tournament winner.
- **Excellence Award** (2021) Highest award presented in the VEX Robotics Competition. Superior performance in design innovation, build quality, autonomous programming, oral communication, and documentation.