# Zachary Russell

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## *EDUCATION*

**University of Virginia**
Bachelor of Science in Computer Science, May 2024
*GPA*: 3.79

## *EXPERIENCE*

**Undergraduate Research Intern | UVA Biocomplexity Institute:** May 2023 – Aug 2023

- Performed research with surrogate model simulation team at UVA's AI For Science research group
- Specialized in machine learning model and backend system design
- Leveraged Rivanna supercomputer to simulate earthquake data and designed a model to assist predicting future seismic activity

**Embedded Software Engineer Intern | Emerson:** Jun 2022 – Aug 2022

- Developed C and assembly programs used to control Emerson proprietary PLC modules
- Implemented features to allow a proprietary CPU model to validate daylight savings time
- Wrote multitude of unit tests that were added to weekly department system test suite
- Collaborated with team of interns to develop and deploy a live-data report dashboard at the Emerson Charlottesville headquarters

**Computer Science Teaching Assistant | University of Virginia:** Aug 2022 – Jan 2023

- Assisted students with algorithms and data structures by emphasizing conceptual understanding
- Graded homework, quizzes, and exams for Data Structures & Algorithms 2 course

## *PROJECTS*

**Reminder Tracking App (MongoDB, Express, React, Node)**

- Developed an app to track a user's reminder items, including a React client, Express server & MongoDB database
- Created and styled a dynamic ReactJS webpage that fetches from the database and can send back new or augmented data
- Included a user authentication feature using signed JsonWebTokens

**Tutor Matching Site (Django, JavaScript, PostgreSQL, Heroku)**

- Created a dynamic website that allows student accounts to find and match with tutor accounts
- Developed Django models for users, schedules, and requests
- Leveraged university SIS API to pull course data
- Hosted the site through Heroku and increased aesthetic appeal with JavaScript and BootStrap5

**Recycling Image Identifier (PyTorch, Gradio)**

- Implemented image classification using a ResNet50 CNN with PyTorch
- Meshed PyTorch backend together with Gradio interface to host and interact with model
- Achieved approximately 90% accuracy with validation dataset of 2000+ labeled images

## *Technologies and Languages*

- Python, C++, Java, C, JavaScript, HTML, CSS, MATLAB, x86 Assembly
- Git, React, Express, MongoDB, Django, PostgreSQL, PyTorch, Unix