Zachary Russell

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EDUCATION

University of Virginia
Bachelor of Science in Computer Science, May 2024
GPA: 3.80

EXPERIENCE

Artificial Intelligence Research Intern | UVA Biocomplexity Institute: May 2023 – Present

- Worked with the surrogate model simulation team at UVA's AI For Science research group
- Specialized in machine learning model and backend system design
- Used 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
- Worked 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

- Helped teach students 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