

# Zachary Russell

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## **EDUCATION**

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### **UNIVERSITY OF VIRGINIA**

Bachelor of Science in Computer Science, May 2024

GPA: 3.79

## **EXPERIENCE**

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

- Developed new unit tests to evaluate multicasting and broadcasting capabilities of proprietary PLC hardware
- Automated weekly testing of a large testing suite with C# and Python scripts
- Worked with a team of interns to develop a live-data information display that tracked department progress reports from Rally dashboards
- Gained hands-on experience with the Agile Development process with daily scrum standups, sprint reviews, and presentations during large retrospective meetings

### **Computer Science Teaching Assistant | Univ. of Virginia:** Aug 2022 – Jan 2023

- Helped teach students algorithms by emphasizing conceptual understanding of topics
- Graded Data Structures & Algorithms 2 assignments and exams

## **PROJECTS**

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### **Machine Learning Garbage Identifier (PyTorch, Gradio)**

- Completed for the HooHacks 2022 hackathon competition
- Implemented image classification using a ResNet50 CNN with PyTorch
- Meshed PyTorch backend together with Gradio interface to host and interact with model
- Achieved around 80% accuracy in predicting when tested against 2000+ labeled images

### **TIP Compiler Extension <Compiler Class Project> (C++, ANTLR4, LLVM)**

- Developed ANTLR4 parsing grammar to accept/reject incoming language structures
- Included new unit and system tests to have over 90% code coverage
- Created new Abstract Syntax Tree node types with C++ smart pointers
- Delivered a final extension which supported the addition of new expressions, statements, and identifier types within the TIP language

## **Technologies and Languages**

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- Python, Java, C++, C, HTML, CSS, JavaScript, C#, x86 Assembly, MATLAB, Autolt
- Git, PyTorch, Django, LaTeX, ANTLR4, Unix