

# Barrett Ruth

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## EDUCATION

### University of Virginia

May 2026

*Bachelor's of Computer Science, Economics*

*Charlottesville, VA*

*GPA: 4.00/4.00*

- **Academic Distinctions:** Dean's List (Fall '22—Spring '24), \$80,000 Merit Scholarship
- **Clubs & Activities:** ICPC, theCourseForum, Autonomous Racing
- **Coursework:** Data Structures, Algorithms, Operating Systems, Algorithmic Economics, Cloud Computing

## EXPERIENCE

### Ramp | *Backend Software Engineering Intern*

September—December 2025

- Incoming on AI Tooling

### DRW | *Software Developer Intern*

June—August 2025

- Incoming on Commodities Team

### VISA | *Software Engineering Intern*

May—August 2024

- Piloted “GenAI Support Assist,” automating resolution of global authentication support issues, reducing team’s weekly debugging time by 8 hours and selected by Senior VP of Payment Solutions
- Sole intern to deploy to internal cloud platform CloudView, utilizing GenAI APIs (Ada-002, GPT) to poll real-time production data, storing embeddings/logs in VectorDB/MySQL, and authenticated frontend for support staff

### TRB Capital Management | *Quantitative Developer Intern*

May—August 2024

- Developing trading frameworks and algorithms for medium-frequency quantitative asset manager with C++20
- Implemented end-to-end development strategies, including SWIG backtesting, CI with Catch2/gcov, and strategy deployment

### UVA Department of Computer Science | *Undergraduate Research Assistant*

January—May 2024

- Published analysis of auto-grading technologies based on global primary survey data to SIGCSE Technical Symposium
- Partnered with UVA CS faculty to reduce assignment creation time by 50% and average grades by 20%

### Nth Venture Studio | *Software Engineering Intern*

February—August 2023

- Implemented employee upskilling platform with FastAPI and OpenAI APIs approved by CEO and investor board

### GoTransverse | *Software Engineer*

August 2020—February 2022

- Developed full-stack billing management apps with TypeScript, MySQL, MariaDB, Kafka, and Vault part-time (COVID)

## EXTRACURRICULARS

### theCourseForum | *President*

August 2022—Present

- President of #1 university course review and grade analytics platform serving 20,000+ students (~85% student body)
- Implemented trigram/reverse-indexing class and grade search algorithm saving \$150 monthly

### Cavalier Autonomous Racing | *Safety & Autonomy Software Engineer*

April 2024—Present

- Migrated GUI to Qt C++, increasing data throughput by 25% and enabling asynchronous monitoring of car metrics
- Refactored state machine to handle emergency racing scenarios using ROS2 and custom YAML validator

## PROJECTS

### telegraph | *C++, GTest, Valgrind, Make, gcov, perf, magic-trace, jmalloc*

- Designed STL-compliant graph/tree library (pathfinding, traversals, iterators, metrics)
- Utilized parallel computing and profilers to specialize algorithms, attaining 90% of Boost Graph Library performance

### guard.nvim | *C, Lua, libuv, busted, NeoVim API*

- Developed formatting and linting utility supporting NeoVim code editor ecosystem with 6,000+ users
- Leveraged coroutines and luv spawn for asynchronous executing, improving latency by 25% vs competition (confirm, null-ls)

## TECHNICAL SKILLS

- **Languages:** Python, C, C++, Java, JavaScript, TypeScript, HTML/CSS, SQL, Lua, Shell, Bash, R
- **Technologies/Frameworks:** React, Node.js, Next.js, Git, Docker, AWS, GCP, Redis, Protobuf, Jenkins