Barrett Ruth

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EDUCATION

University of Virginia   May 2026
Bachelor's of Computer Science, Economics   *Charlottesville, VA*
- **Academic Distinctions**: Dean's List (F22—S24), $80,000 Merit Scholarship Recipient   *GPA: 4.00/4.00*
- **Clubs & Activities**: ICPC, theCourseForum, Cavalier Autonomous Racing
- **Coursework:** Data Structures, Advanced Algorithms, Operating Systems, Algorithmic Economics, Econometrics

EXPERIENCE

Hardware Profiling Research Assistant | *Insight Computer Architecture Lab*   January 2025—Present
- Profiling NVIDIA GH200 superchip

DRW | *Software Developer Intern*   June—August 2025
- Incoming on Commodities Team

Ramp | *Backend Software Engineering Intern*   September—December 2025
- Incoming on AI Tooling

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
- Developed frameworks and algorithms for medium-frequency trading application with TWS API
- 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

Nth Venture Studio | *Data & AI Intern*   February—August 2023
- Implemented technical MVP for CERTD (employee upskilling seed startup)

GoTransverse | *Software Engineer*   August 2020—February 2022
- Developed full-stack billing management applications part-time (COVID)

EXTRACURRICULARS

theCourseForum   August 2022—Present
- President of #1 university course review and grade analytics platform serving 20,000+ students (~85% student body)
- Implemented trigram/reverse-indexing search algorithm supplanting ElasticSearch, saving $150/mo

Cavalier Autonomous Racing   April 2024—Present
- Increased track boundary detection speed by 25% with Graham's Scan and collinearity optimization
- Refactored state machine to handle emergency racing scenarios using ROS2 and in-house YAML validator
- Migrated GUI to Qt C++, increasing data throughput by 25% and enabling asynchronous monitoring of car metrics

PROJECTS

guard.nvim | *C, Lua, libuv, busted, NeoVim API*
- Developed formatting and linting utility supporting NeoVim code editor ecosystem with 6,000+ users
- First plugin to leverage coroutines for asynchronous execution, providing non-blocking user experience

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