Barrett Ruth

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EDUCATION

University of Virginia — Expected May 2026

Bachelor's, Computer Science, Economics; GPA: 3.99/4.00 — *Charlottesville, VA*

- **Clubs & Activities**: ICPC, Latinx/Hispanic Peer Mentor Program, ACM, Google DSC, Open-Source Software
- **Coursework:** Data Structures, Algorithms, Computer Architecture, Software Development, Discrete Math

EXPERIENCE

TRB Capital Management — May 2024—Present

Quantitative Developer Intern — *Charlottesville, VA*

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

VISA — May 2024—August 2024

Software Engineering Intern — *Austin, TX*

- 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

UVA Department of Computer Science — January 2024—May 2024

Undergraduate Research Assistant — *Charlottesville, VA*

- Independently developed auto-grader framework integrated with learning management and student feedback systems, based on IRB-approved survey data collected from 70+ SIGCSE computer science faculty members around the globe
- Partnering with faculty to streamline homework design process, expecting a 50% reduction in creation time, average increased grades by 20%, and improved student code quality with formative feedback

Nth Venture Studio — February 2023—August 2023

Software Engineering Intern — *Austin, TX*

- Implemented an assessment platform to validate employee skills with FastAPI, PostgreSQL, and OpenAI APIs, reducing content creation time by 80%, shared with and approved by CEO and investor board
- Designed job-handling and batching to increase assessment and occupation generation using event processing with Redis/RQ

GoTransverse — August 2020—February 2022

Software Engineering Intern — *Austin, TX*

- Developed internal environment release management system with using Swagger, Flask, SQLAlchemy and PostgreSQL
- Refactored frontend to TypeScript, reducing time to dispatch batched billing management jobs by 25% for all clients

PROJECTS

Course Forum | *Django, HTML/CSS, jQuery, DigitalOcean* — August 2022—Present

President

- Direct development, marketing, and design teams for university's leading course review platform serving 85% student body
- Improved developer build times by 200% via hot-reloading and caching dependencies with Docker
- Implemented trigram/reverse-indexing search algorithm saving $150 monthly

Cavalier Autonomous Racing — April 2024—Present

Safety & Autonomy Software Engineer

- 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

Proficio AI | *React, Daisy UI, Google Auth, Selenium*

- Developed technical and behavioral interview preparation assistant, placing 2nd at HooHacks (Virginia's largest hackathon)
- Deployed to AWS using DynamoDB, API Gateway Websockets feedback, and personalized advice via Amazon Textract

TECHNICAL SKILLS

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