Barrett Ruth

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EDUCATION

University of Virginia   *Charlottesville, Virginia*
Bachelor of Arts in Computer Science & Applied Statistics   *Expected May 2025*
- **GPA**: 3.98/4.0, Dean's List
- **Clubs**: ICPC, Cracking the Interview, Economics Club, Madison House
- **Coursework:** Data Structures and Algorithms, Computer Systems and Organizations, Software Development

TECHNICAL SKILLS

- **Languages:** Python, Java, HTML/CSS, JavaScript, TypeScript, C/C++, PostgreSQL/MySQL, Lua, Bash
- **Frameworks**: React, Flask, Django, Node.js, JUnit, Kafka, Next.js
- **Developer Tools**: Git, Docker, Linux, Google Cloud Platform, Gradle, Redis, Zookeeper

EXPERIENCE

UVA Department of Computer Science   *Charlottesville, VA*
Undergraduate Research Assistant   *January 2024—Present*
- Spearheading development of automatic assignment generator integrated with grading, LMS, and student feedback systems
- Partnering with faculty to streamline homework design process, expecting a **50%** reduction in creation time**,** increased grades by **20%**, and improved student code quality with specialized feedback

UVA Department of Biology   *Charlottesville, VA*
Undergraduate Research Assistant   *January 2024—Present*
- Disproving the use of ANI (Average Nucleotide Identity) to establish a microbial species boundary
- Extracted and analyzed **100TB+** of genome sequence datasets from bioinformatic papers using R and Python

Nth Venture Studio, CERTD   *Austin, TX*
Data & AI Software Developer Intern   *February 2023—August 2023*
- Implemented an assessment platform to validate employee skills with Flask, PostgreSQL, and machine learning transformer technologies, reducing content creation time by **80%**, shared with and approved by CEO and investor board
- Designed job-handling and batching to increase client iteration speeds by **20%** using event processing with Redis and RQ

GoTransverse   *Austin, TX*
Full Stack Software Engineer Intern   *August 2022—February 2022*
- Pioneered and implemented internal environment release management system for entirety of company internal products using Swagger, Flask, scripting, PostgreSQL and MariaDB technologies
- Reduced the time to dispatch jobs by **25%** by revamping frontend UI with ReactJS and TailwindCSS technologies

theCourseForum
Vice President, Head of Engineering   *August 2022—Present*
- Oversee development projects and application infrastructure for the University of Virginia's leading course review platform with **41,000+** users (**85%** of student population) and supervise onboarding of **30+** recruits per semester
- Reduced semesterly downtime from 8 to 2 hours (a **75%** reduction) via automated crash reports to accelerate debugging
- Implemented site-wide search algorithm saving **$150** monthly and increasing user retention by **15%**

PROJECTS

Atlas | *Next.js, D3.js, TailwindCSS, Latex*
- Develop and maintain machine learning research journal, focusing on cutting-edge transform technologies and the interpretability of novel black-box algorithms (VQ-VAE, GPT, Diffusion)
- Iterated with co-developer to enhance user interactivity with D3.js and in-browser code execution

Nvimdev | *Lua, Vim, busted*
Software Organization, Core Maintainer   *August 2023—Present*
- Publish and maintain projects with **6,000+** github stars supporting Neovim code editor ecosystem

import-cost | *Lua*
- Implemented in-editor JavaScript bundle size analyzer, porting **2,000,000+** user Visual Studio Code plugin to NeoVim