Barrett Ruth

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Skills

- **Languages:** Python, Javascript, C++, TypeScript, CSS, TailwindCSS, HTML, Java, Lua, Bash
- **Tools:** React, Next.js, Zookeeper, Flask, Django, PostgreSQL, SQLite, Redis, Docker, Google Cloud Platform, AWS

Education

University of Virginia, Charlottesville, VA   August 2022 — May 2025
Bachelor of Computer Science, Bachelor of Applied Statistics   Dean's List, GPA: 3.97/4.0

Experience

Nth Venture Studio - CERTD   February 2023 — August 2023
Full-Stack Software Engineer, Artificial Intelligence Intern

- Independently developed company MVP solution shared with CEO and investor board
- Reduced content creation time by 80% increasing productivity by 20% using event processing with Redis and RQ
- Designed and implemented an automated assessment and content-creation process for clients with Flask, PostgreSQL, and machine learning transformer technologies
- Effectively met studio deadlines through collaborating with both executive venture studio board and CERTD staff

UVA Department of Biology   October 2022 — Present
Computational Biology and Genomics Research Assistant

- Disproved the use of ANI (Average Nucleotide Identity) to establish a microbial species boundary
- Revised bimodal distribution of 150,000+ genomes by eliminating culturing bias using metagenomics
- Extracted and analyzed 100+TB of genome sequence datasets from bioinformatic papers using R and Python

GoTransverse   August 2020 - February 2022
Full-Stack Software Engineer

- 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
- Managed revenue and batched job details and deployment to ensure consistent, correct, and intelligent cloud billing operations for clients at an international scale
- Consistently exceeded product release deadlines by maintaining effective mentor and team communication in both online and in-person environments during school years over 16 consecutive months

Projects

theCourseForum   August 2022 — Present
Vice President, Head of Engineering

- Oversee university-leading course review platform operations and application infrastructure with 41,000+ users (85% of student population) and supervise onboarding of 30+ recruits per semeter
- Reduced website downtime from 8 to 2 hours (a 75% reduction) by coding automated crash reports to accelerate debugging and employing lean six-sigma methodologies to enhance communication between developers
- Implemented site-wide search algorithm saving $150 monthly and increasing user engagement by 20%

Atlas   July 2023 — Present
Machine Learning Research Blog

- Develop and maintain machine learning research journal using Next.JS, TailwindCSS technologies
- Discusses cutting-edge transformer architectures and the interpretability of novel black-box algorithms (VQ-VAE, GPT, Diffusion) to make deep learning more approachable and intuitive
- Iterated with co-developer to optimize reader experience with D3.js and in-browser code execution

nvimdev   August 2023 — Present
Software Organization, Core Maintainer

- Publish and maintain projects with 6,000+ github stars supporting Neovim code editor ecosystem
- Implement features and address bugs within a 24-hour window working asynchronously with global team
- Quickly adapt to fragile external APIs, ensuring timely and robust plugin updates