Raghav Singh

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Education

University of California Santa Cruz — Santa Cruz, CA
Bachelor of Science in Computer Science, GPA: 3.80/4.0 — *June 2026*

Relevant Coursework:
Data Structures & Algorithms, Operating Systems, Computer Architecture, Distributed Systems, Artificial Intelligence, Machine Learning, Software Design, System Design, Cloud Computing, Abstraction Python, Assembly Language

Experience

Software Engineer Co-Op Intern — January 2025 – Present
Nutanix — *San Jose, CA*

- Enhancing **GenAI** inferencing by integrating **SIMD** instructions like **AMX** and **AVX-512** on modern CPUs, continuously improving processing efficiency
- Developing and refining **Prometheus/Grafana** dashboards to dynamically analyze and optimize CPU core scaling and memory usage, enhancing system performance
- Actively exploring and implementing **Retrieval-Augmented Generation** to upgrade GenAI pipelines, and benchmarking open-source **LLMs** on Linux for more cost-effective AI solutions

Machine Learning Researcher — September 2024 – Present
Artificial Intelligence Explainability Accountability (AIEA) Lab — *Santa Cruz, CA*

- Enhanced **Transformer** models to reduce **hallucination** errors by **15%**, using fine-tuning techniques on Pytorch
- Linked **OpenAI's** API with **SwiProlog** for quicker translation of natural language into executable Prolog facts.
- Implemented a **backward chaining** inference engine, improving deduction efficiency through recursive conclusions from facts.

Software Engineer Intern — January 2024 – September 2024
Tech4Good @ UCSC — *Santa Cruz, CA*

- Developed and deployed UI components for the Compass Goals reflection and goal-setting app using **Angular** and **Figma**, ensuring a seamless user experience
- Implemented state management with **NgRx** and handled asynchronous data flows using **RxJS**, optimizing performance and reactivity in a **Firestore-backed NoSQL** database
- Implemented **15+ responsive UI** components, optimizing cross-platform compatibility and user interface fluidity

Projects

RankPath | *React.js, Scikit-learn, MySQL, Flask, JWT, AWS, Chart.js* — GitHub

- Developing RankPath, a **rank predictor** app that uses **linear regression** via Scikit-learn to analyze historical exam and data, providing students with insights into potential college placements based on their exam ranks
- Will empower over **2.5 million students** annually in India, revolutionizing admissions with tailored college recommendations during critical admission phases

CircleRush | *React-Native, Expo, Firebase JS SDK, Node.js, TypeScript* — Demo | GitHub

- Launched CircleRush, enhancing task management productivity by **25%** through **social** and **competitive** features in a mobile app.
- Facilitated user engagement with registration, group formation, and **dynamic real-time leaderboard** updates.

AI-Slide Generator | **TikTok Tech Jam** | *Angular, Node.js, Express.js, OpenAI GPT-4* — Demo | GitHub

- Developed **AI-Slide** Generator, an application that uses React, Python, and the ChatGPT API to automate custom **PowerPoint** presentations from user prompts, enhancing productivity and connectivity

Multi-Threaded Server Program | *C, Unix/Linux, pthreads, semaphores, regex* — GitHub

- Multiple Threading Server in C takes n threads requests. Uses queue data structure and a read-write lock to ensure synchronization. Achieved **100+** requests/sec and **50ms** Latency.

Technical Skills

Languages: Python, JavaScript, C/C++, MySQL, MongoDB, HTML, CSS, RISC-V
Frameworks: Angular, React.js, React Native, Node.js, Flask
Developer Tools: Git, GitHub, AWS, Vim, Linux, VS Code, Visual Studio
Libraries: Bootstrap, Scikit-learn, Pandas, NumPy, Matplotlib, GUI's