Siddharth Rao

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Skills

- **Languages:** Java, JavaScript, TypeScript, Python, C/C++, C#, SQL, HTML/CSS, JSON, Dart, Rust, Markdown, Data Serialization
- **Frameworks & Tools:** REST APIs, Flutter, React Native, Firebase, Keras, Node.js, Tensorflow, React.js, Docker, Unity, MongoDB, Git, GitHub, PostgresSQL, Amazon Web Services, Google Cloud Platform, Deployment Infastructure
- **Other:** Robotics, Cloud Computing, Computer Vision, Development Operations (DevOps), Data Analysis, Full Stack, Control Loops, Embedded Systems, Machine Learning

Professional Experience

City Of Carnation   **Carnation, WA, USA**
Software Developer   *November 2022 - January 2024*
- Developed a mobile app along with a REST API and a Google Cloud's Firebase backend, allowing residents to receive updates and report issues. Ensured scalability using Docker and AWS.
- Maintained services for over 3,500 users, including SQL databases for utility billing, real-time analytics, and secure networking and security to support a website with over 2,000 concurrent users.
- Designed strategies to improve security, scalability, and reliability for critical systems like flood warnings and utility services, resulting in a 15% increase in system uptime.
- Extensively used tools such as Postman, AWS, Microsoft Azure, Cloudflare, Git, GitHub, and continuous integration tools to optimize development and deployment processes.

FIRST Robotics - FRC Team #4089 & FTC Team #13648   **Duvall, WA, USA**
Mentor, Volunteer, Software Lead, Team Co-Lead   *September 2017 - Present*
- Engineered a custom embedded control system and software for a high-performance competitive robot. Participated in over 40 international competitions.
- Utilized closed-loop control paradigms, machine learning-based computer vision, and real-time autonomous path-planning for optimal performance.
- Employed version control tools (Git, GitHub), data logging, telemetry frameworks, path planning non-linear problem optimizers, and motion profiling, increasing competition success by 300%.
- Transitioned to mentoring students in robotics development as well as volunteering at competitions, assisting over 1,000 teams in debugging code under pressure.

Sensiable   **Remote**
Full Stack Developer   *July 2022 - September 2022*
- Utilized Figma for UI mock-ups, collaboratively designing and refining user interfaces, which reduced development time by 30% by finalizing the UI before starting development.
- Created a companion app for an air quality IoT device using React Native, Node.js, and PostgreSQL. Managed user accounts, facilitated IoT communication, and ensured efficient data storage.
- Achieved a 98% service uptime by implementing reliable data collection and analysis in corporate environments. Leveraged distributed systems, load balancing, and scalability solutions, resulting in a 10% reduction in system downtime.

Duvall Days   **Duvall, WA, USA**
Full Stack Developer   *November 2018 - June 2019*
- Collaborated with a team to gather and document requirements, standardize branding across platforms, and create a comprehensive development roadmap. Delivered 100% of deliverables on time by establishing a clear project timeline.
- Developed and deployed a user-friendly mobile app for the City of Duvall's summer festival, featuring public navigation and promoting 500+ local businesses.
- The app received over 600 downloads and multiple positive reviews on the Google Play Store, successfully managing over 400 concurrent users on the day of the festival.

Projects & Outside Experience

Harmony
Project Lead
- Developed a Flutter app for Google's Gemini Developer Challenge, incorporating features powered by Google's Gemini LLM AI to augment user music listening habits with hyper-personalized insights.
- Employed industry-standard Flutter techniques, including go_router and the provider paradigm. Leveraged Riverpod for efficient state management and Freezed for creating immutable data models from external sources.
- Implemented OAuth 2.0 for Spotify API authentication, enabling secure data retrieval, analysis, and display of user tracks and personal data.

Nova Machine Learning Chess Engine   **Redmond, WA, USA**
- Developed software to clean and preprocess a large dataset of 20,000 games, encoding over 200,000 positions for optimal training. This involved removing low-quality data and efficiently batching and prefetching them into memory.
- Created a TensorFlow model to evaluate chess positions using convolutional layers, GRU, and LSTM layers for state preservation across multiple positions in a game.
- Utilized Google Cloud Compute's GPU hardware to accelerate model training, resulting in a 500% improvement in training speed.
- Implemented high-speed algorithms to evaluate future positions, achieving a 50% increase in efficiency for finding optimal moves.

Education

University of Washington   *September 2021 - June 2023*
Bachelor's, Computer Science   *GPA: 3.5*
- Projects include:
- 68000 Assembly Disassembler
- Vanguard - A SQL and Flutter based FRC scouting app
- Signal - User testing lifecycle with fully user tested wireframes and mockups
- ThreadOS File System - Implementing an Unix-like file system on top of Unix-like Java operating system.