Sachi Jayaraman

Skills

* **Proficient in at least one major programming language (backend focus):** Python (with frameworks like Django or Flask) offers versatility across multiple domains, including competitive programming, web development (backend), data science, and scripting. Its large community and extensive libraries make it an excellent choice.

* **Mastery of Frontend Web Development:** JavaScript (with frameworks like React or Vue.js) is crucial. This allows for building interactive and dynamic user interfaces, a skill highly sought after in industry. Understanding HTML, CSS, and responsive design principles is equally important.

* **Data Structures and Algorithms (DSA):** A strong foundation in DSA is vital for success in competitive programming, optimizing backend systems, and even some AI/ML tasks. Practicing on platforms like LeetCode and HackerRank significantly improves problem-solving abilities.

* **Database Management Systems (DBMS):** Experience with relational databases (like PostgreSQL or MySQL) and NoSQL databases (like MongoDB) is essential for both backend and web3 development. Understanding database design, querying, and optimization is crucial.

* **Fundamentals of Machine Learning:** A basic understanding of common ML algorithms (linear regression, logistic regression, decision trees), libraries (like scikit-learn in Python), and model evaluation metrics provides a strong foundation for future AI/ML specialization. Projects focusing on applied ML, even simple ones, showcase practical skills.

Personal Info

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Career Objective

To leverage my strong backend development skills in Python and DSA expertise to build robust and scalable web applications, contributing to innovative projects in competitive programming, web3, and AI/ML. To excel in a challenging environment where I can continuously learn and expand my expertise in frontend development and database management.

Achievements

Achievement 1:

Developed a novel, real-time, collaborative code editor for competitive programming utilizing WebRTC and a custom, distributed data structure. This project significantly reduced latency in collaborative coding compared to existing solutions (benchmarked at a 30% improvement over Google Docs' collaborative features in a controlled environment). The project also incorporated AI-powered code completion and bug detection features using a fine-tuned GPT-3 model resulting in a 15% increase in coding efficiency during testing with a group of 10 experienced competitive programmers. The backend, written in Go, leveraged goroutines and channels for high concurrency and scalability. The application is currently deployed on a private server and available for review.

Achievement 2:

Created a decentralized application (dApp) for secure and transparent academic credential verification leveraging blockchain technology (Ethereum). This dApp addresses the growing concern of academic fraud by providing tamper-proof storage and verification of student transcripts and certificates. The frontend uses React for a user-friendly interface, while the backend, built with Node.js and Solidity, ensures secure interactions with the smart contracts on the Ethereum blockchain. The project features an advanced access control system built using ML algorithms to mitigate unauthorized access attempts and utilizes IPFS for efficient off-chain storage of large document sizes. The dApp has been successfully audited for security vulnerabilities and demonstrates a reduction in verification time by 75% compared to traditional methods.