Aarna Tiwari

Career Objective

To leverage competitive programming and full-stack development expertise, including Web3 and AI/ML, to build innovative and high-performing software solutions. Seeking a challenging role where I can contribute to cutting-edge projects and continuously expand my skillset.

Personal Info

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College: Cummins College of Engineering for Women

Achievements

Achievement 1:

Developed a novel, high-performance algorithm for optimal route planning in dynamic, large-scale road networks, resulting in a 30% reduction in computational time compared to state-of-the-art solutions. This algorithm, implemented in C++ and integrated into a user-friendly web application (using React frontend and Node.js backend), was deployed as a prototype for a local transportation company, demonstrating practical application and garnering positive feedback on its efficiency and user interface. The project also featured an innovative visualization component leveraging WebGL for real-time traffic flow representation.

Achievement 2:

Designed and implemented a decentralized, secure platform for managing digital art NFTs using Solidity (Ethereum) and IPFS. The platform, featuring a custom

frontend built with Vue.js and integrated with a machine learning model (built with TensorFlow.js) for automatic image tagging and content-based retrieval, successfully facilitated the creation, sale, and secure storage of over 50 unique digital artworks within a closed beta test. The project demonstrates expertise in blockchain technology, frontend development, AI/ML integration, and secure handling of sensitive user data. The platform's unique contribution lies in its incorporation of ML-driven metadata generation, enhancing the discoverability and searchability of NFTs.

Skills

* **Competitive Programming Proficiency (CP):** Expertise in algorithms and data structures, demonstrated by strong performance on platforms like Codeforces, LeetCode, or HackerRank. This showcases problem-solving skills crucial for any software engineering role. Examples include mastery of dynamic programming, graph algorithms, and efficient sorting/searching techniques.

* **Frontend Development Mastery:** Deep understanding of HTML, CSS, and JavaScript, along with experience using popular frameworks like React, Angular, or Vue.js. Ability to build responsive, user-friendly interfaces with a focus on performance and accessibility. This includes familiarity with testing frameworks (Jest, Cypress) and state management solutions (Redux, Vuex).

* **Backend Engineering Expertise:** Proficiency in server-side languages like Python (with frameworks like Django or Flask), Node.js, Java (with Spring Boot), or Go. Experience with databases (SQL and NoSQL), API design (REST, GraphQL), and cloud platforms (AWS, GCP, Azure). Understanding of microservices architecture and containerization (Docker, Kubernetes) is a significant plus.

* **Web3 Development Skills:** Knowledge of blockchain technology, smart contract development (Solidity, Vyper), and decentralized applications (dApps). Familiarity with Ethereum, IPFS, and other relevant technologies. This skillset demonstrates an understanding of emerging technologies and their potential applications.

* **AI/ML Application Development:** Proficiency in Python libraries like TensorFlow, PyTorch, or scikit-learn. Experience with machine learning models (classification, regression, clustering) and deep learning architectures (CNNs, RNNs). Ability to apply these techniques to solve real-world problems and deploy models using cloud services.