Vansh Khanna

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Education

Purdue University West Lafayette, US

B.Sc. in Computer Engineering; *Aug 2020 – May 2024 (Expected)*

Relevant coursework: Advanced C Programming, Data structure and algorithms, Digital circuit design, Python for Data Science, Object Oriented Programming with C++, Operating Systems,Microprocessor Systems and Interfacing, Networks, Compilers, Artificial Intelligence, Encryption and Secuirty, Signal Processing

Skills

Programming: C, C++, Java, Python, MySQL, Angular, React, Node.js Assembly, Rust, MATLAB

Technologies: Git, Arduino, STM32, Rest API, API Six, Linux, Simulink, LTspice

Languages: English (Professional), Hindi (Native)

Developer Tools: GitHub, Linux, BootStrap, VS code, Docker, Postman, Jenkins, Apache Maven, Pandas, NumPy, SciPy, PyTorch

Work Experience

Ernst & Young New Delhi, India

SWE Intern *Jul 2023 – Aug 2023*

- Participated in the comprehensive development of a Single Sign-On (SSO) solution, utilizing JAVA and APISIX technologies.
- Collaborated seamlessly with cross-functional teams, eliciting and analyzing requirements to architect SSO functionality.
- Developed robust and secure APIs Transport Layer Security (TLS) to facilitate smooth authentication and authorization processes, ensuring optimal user interactions.
- Helped with the seamless integration of the SSO functionality with diverse citizen centric applications, centralizing user access control and bolstering data security.
- Rigorously conducted testing, debugging, and performance tuning to guarantee the resilience and efficiency of the SSO implementation.

Purdue University - ecelabs West Lafayette, IN

Software Developer *Jan 2024 – Present*

* Worked on the development of innovative features using React at EceLabs, Purdue University.
* Actively contributed to operational tasks, collaborating with cross-functional teams for seamless integration.
* Streamlined processes and enhanced system efficiency through hands-on involvement in operational aspects.
* Designed and implemented a performance dashboard, providing critical insights for decision-making.
* Demonstrated a commitment to delivering high-quality software solutions and balancing development with operational responsibilities.

TestBook.com New Delhi, India

Frontend Developer Intern *May 2022 – Aug 2022*

* Developed Frontend using Angular and JS.
* Developed Rest API and integration with backend.
* Worked in Agile Environment with active participation in weekly sprint planning and daily scrum calls
* Enhanced page performance through techniques like lazy loading, asset loading, and client-side caching.
* Active team member of static and dynamic content distribution planning using Cloud flare CDN.
* Developed and deployed Configuration management system using Git.

Projects

Multi threaded C++ Server
* Designed, implemented, and optimized a multi-threaded server.
* Leveraged advanced C++ programming techniques.
* Implemented TCP to ensure seamless client-server interactions, fostering efficient data exchange.
* Conducted rigorous testing and debugging to identify and rectify potential bottlenecks and synchronization issues, resulting in a stable and reliable server architecture.

Developed a Linux distro
* Optimized memory management with one and two-level paging.
* Implemented multi-threading for concurrent process execution.
* Developed a dynamic task scheduling algorithm.
* Integrated trap handling for error management.
* Designed a comprehensive file system module for data storage and retrieval.

Developed Full stack Employee Information Management System
* Backend: Java-based API for efficient communication.
* Frontend: Dynamic React UI for data management.
* Database: MySQL for secure, scalable data storage.
* RESTful endpoints: Real-time data updates.

Movie finder web app | *Website*
* Frontend: Designed an intuitive Angular-based UI for seamless movie searches.
* Backend: Implemented a robust Node.js server with RESTful APIs for data retrieval.
* Data Integration: Utilized external APIs like IMDB for real-time movie information.

Compiler
* Efficient Scanner/Lexer: Developed for accurate and fast tokenization.
* Robust AST Framework: Facilitates precise analysis and manipulation of code logic.
* Versatile Code Generation: Translates ASTs into optimized intermediate and machine code.
* Control Structure Support: Handles conditionals, loops, and branching for proper code flow.
* Comprehensive Function Management: Includes prototypes, parameters, and return values.
* Advanced Register Allocation: Optimizes CPU register usage for improved runtime performance.
* Pointer and Array Support: Enables manipulation of complex data structures.
* Robust Error Handling: Provides user-friendly error reporting for enhanced debugging.

Plant Monitor Dashboard
* Responsive React UI Development: Engineered an intuitive and responsive user interface using React, ensuring a seamless experience across various devices for monitoring plant parameters.
* RESTful API Integration: Implemented robust REST APIs to seamlessly connect the React dashboard with an online MySQL database. Facilitated efficient data retrieval and updating functionalities for real-time monitoring.
* Real-time Data Visualization: Designed and integrated dynamic charting components to visually represent sensor data in real-time. Empowered users with instant insights into plant conditions for proactive decision-making.
* Downloadable Data Capability: Implemented a feature-rich system allowing users to download historical data easily. Enhanced the dashboard's utility by providing users with the ability to analyze trends and patterns over time.
* Secure Database Management: Ensured the security and integrity of the MySQL database by implementing robust authentication and authorization mechanisms. Prioritized data privacy and protection against potential vulnerabilities.
* Cross-functional Collaboration: Collaborated with cross-functional teams, including sensor engineers and data scientists, to understand requirements and integrate diverse functionalities seamlessly.

Certificates

Decoding DevOps Udemy *Aug 2023*

Google Tensor Flow *Dec 2022*