Shubham Jayraj Gavkare

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LeetCode

SUMMARY

Software Engineer with hands-on experience in C++11/14/17, strong understanding of Object-Oriented Design, STL, and Design Patterns. Skilled in developing scalable software for real-time systems on Linux/Unix platforms, Shell Scripting, and unit testing. Proven ability to debug complex systems, optimize code, and work in Agile development teams.

EDUCATION

Bachelor of Technology (B.Tech) in Information Technology ; Aug 2020 – Jun 2024 | Pune, India
CGPA: 9.02/10 | Percentage : 82.7
JSPM Rajarshi Shahu College of Engineering, Tathawade | *Savitribai Phule Pune University*
Relevant coursework: Computer Science Fundamentals such as **data structures, algorithms, object-oriented programming, and operating system**

SKILLS

- Programming Languages: C, C++, C++11/C++14/C++17, Python Scripting, Shell Scripting
- Frameworks & Technologies: HTML, CSS, Express.js, Node.js, OpenCV
- Databases: SQL (MySQL), NoSQL (MongoDB)
- Testing & Tools: Google Test, Katapult, GDB, Visual Studio Code, Visual Studio
- Networking Protocols & Concepts: Proficient in TCP/IP stack, OSI Model (7 Layers)
- Core Competencies: OOP, Data structures, Multithreading, Asynchronous Programming, STL, Algorithms, Secure Coding, Agile Methodology, Automation Scripting, System Design (Basics), REST APIs, Debugging
- CI/CD: Git, GitHub Actions, GitLab
- Operating Systems: Linux, Windows

WORK EXPERIENCE

KPIT Technologies Dec 2023 – present | Pune, India
Associate Software Engineer
- Engineered high-performance application-level modules in Linux using Modern C++, applying STL, OOP, and design patterns to build scalable and maintainable systems.
- Designed and optimized CAN Bus communication modules using bit-fields, applying low-level programming techniques to ensure efficient data flow and memory usage.
- Developed template-based utilities leveraging smart pointers (unique_ptr, shared_ptr) and pointer arithmetic, ensuring safe and performant memory management across modules.
- Upgraded and refactored legacy C++ codebases to support new features, improving code readability, modularity, and minimizing regression risks.
- Employed Google Test for writing comprehensive unit and death tests, and utilized GDB for debugging segmentation faults, race conditions, and memory leaks.
- Automated build and deployment processes using Shell scripting and CMake, and maintained version control through Git and GitLab.
- Performed static code analysis with Katapult, ensuring compliance with coding standards and enhancing code quality in critical automotive systems.
- Built and deployed AI-powered LLM agents using Langflow and OpenAI models, integrating with custom codebases to deliver context-aware, task-specific automation.
- Designed end-to-end pipelines using Langflow's flow-based editor, orchestrating APIs, agent communication, and file processing to create intelligent, adaptive behaviors in production-like AI environments.

Persistent Systems Jun 2023 – Sep 2023 | Pune, India
Martian Summer Intern (Internship Program)
- Applied data structures, algorithms, and Core Java to develop and optimize software modules for real-time systems, improving processing efficiency.
- Collaborated with stakeholders to define and implement software modules, delivering a certificate of appreciation for high-performance contributions and problem-solving skills.
- Improved system performance and efficiency by optimizing core functions and implementing best practices in software design.

PROJECTS

Vehicle Tracking and Lane Departure Warning System Apr 2024

Technologies used: OpenCV, C++, Linux

- Designed and implemented algorithms for car tracking and speed estimation using Haar Cascades and KCF trackers, displaying real-time vehicle speed and count.
- Developed a lane departure warning feature, applying diagnosability and reliability principles to detect lane markings and trigger alerts with real-time alerts, ensuring safety-critical reliability..
- Improved system reliability and maintainability by applying modular coding and debugging practices, resulting in a 20% reduction in error occurrences.- Designed a lane departure warning system
- Applied OOP and modular design, reducing error occurrences

Brain Tumor Classification using HOG and XGBoost Aug 2023

- Developed a machine learning model for brain tumor classification using HOG features and PCA for dimensionality reduction, deployed with an Anvil server.
- Utilized MongoDB to manage data storage efficiently, leveraging NoSQL for handling unstructured data.
- Trained an XGBoost classifier with k-fold cross-validation, achieving real-time prediction accuracy for clinical use.

Portfolio Showcase Website Jan 2023

- Developed a responsive personal portfolio website using HTML, CSS, JavaScript and UX Component Development showcasing projects and contact information, demonstrating front-end development skills and design proficiency.

CERTIFICATIONS

Google IT Support (Coursera), Data Structures (UCSD), Machine Learning (Stanford), Meta Full Stack —

PUBLICATIONS

2023 IEEE International Conference on Blockchain and Distributed Systems Security (ICBDS) Dec 2023

IEEE

OPJU International Technology Conference (OTCON 3.0) on Smart Computing for Innovation and Advancement in Industry 4.0 Jun 2024

IEEE

KEY ACHIEVEMENTS

- Achieved a CGPA of 9.02/10, demonstrating strong academic performance in a competitive environment.
- Recognized for rapid learning and high performance in technical projects during internships, with hands-on experience in Python, databases, and real-time systems.
- Completed a rigorous on-site traineeship at **KPIT** starting in Dec 2023 as part of the final semester, undergoing intensive training through the KPIT Genesis program. Gained advanced skills in C++, Git, data structures, and real-time system development. Secured an **A+ grade** in the program and was converted to a full-time role based on performance.

LANGUAGES

English, Marathi, Hindi