Manish Kala

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Professional Summary

Software Engineer with hands-on experience in low-level systems programming, full-stack web development, and custom OS/toolchain design. Proven ability to design scalable, high-performance software in C/C++, JavaScript, and Angular. Skilled in debugging, optimization, and collaborative development, with a strong foundation in data structures, networking, and operating systems.

Work Experience

Software Engineer *Noida, India*
Virtual Engineering Services PVT. LTD. *July 2022 – June 2025*

- Designed and implemented a multithreaded solution in C/C++ for converting 3D objects to 2D PDF drawings, enhancing system reliability and significantly improving performance through parallel processing.
- Built internal command-line utilities in C++,C# to automate repetitive development tasks, reducing manual effort by 40%.
- Utilized advanced optimization techniques in HTML, CSS, JavaScript, and Angular to reduce load times by 30%, facilitating the efficient display of complex, heavy models within web applications.

Software Engineer *New Delhi, India*
Extrieve Technologies *Aug 2021 – July 2022*

- Refactored legacy C/C++ codebase to use thread-safe data structures and modern concurrency patterns, resulting in a 40% increase in stability and performance.
- Designed and developed a document image scanning system using C++ that automated the digitization process, cutting the manual processing time by 50% and boosting throughput by 30%.

Education

Kurukshetra University *Sept 2016 – Dec 2020*
Bachelor of Technology in Computer Science

- **Coursework:** Data Structures and Algorithms, Operating Systems, Database Management Systems, Computer Networks, Software Engineering, Compiler Design, Computer Architecture, Theory of Computation, Artificial Intelligence, Machine Learning

Skills

Technical Skills:

Programming Languages: C, C++, C#, Java, JavaScript, x86 Assembly

Web Development: HTML, CSS, Angular, Laravel, Node.js

Graphics and 3D: OpenGL, Three.js

Networking: POSIX sockets, REST API, WebSocket

Frameworks and Platforms: UWP, Win32, WinForms, WPF, .NET, MFC

Tools and Build Systems: Make, CMake, Git, Postman, Docker

Databases: MySQL

Operating System: Linux, Windows

Version Control: Git (GitHub, GitLab)

Soft Skills: Strong problem-solving, collaborative mindset, adaptability, proactive communication

Projects

Content Management System (CMS) *www.thejat.in*

- Developed a robust CMS for managing blogs, courses, and coding challenges, enhancing content delivery and user engagement.
- Developed a scalable back-end using Laravel with RESTful API integration, ensuring smooth data flow and system reliability.
- Designed an intuitive and responsive admin dashboard that streamlined content creation and management.
- Tool Stack: Laravel, REST API

Custom Operating System along with Boot Loader *TheTaaJ on Github*

- Engineered and implemented a 32-bit x86 operating system kernel from scratch.
- Utilized the frame buffer for graphical output, supporting text rendering, and basic 2D graphics.
- Integrated an ISO 9660 boot system and advanced memory management features.
- Technologies used: C, C++, x86 Assembly, Make, QEMU, VirtualBox.

Lightweight HTTP Server *CppWeb on Github*

- Developed a fast and minimal HTTP server using C++ socket programming without external libraries.
- Handled HTTP/1.0 and HTTP/1.1 GET requests with proper request parsing and response generation.
- Served static content (HTML, CSS, JS, images) directly from the file system.
- Implemented basic HTTP response codes (200 OK, 404 Not Found, 400 Bad Request, etc.).
- Tool Stack: C/C++, POSIX sockets, Make build system.

Custom Build System *TheBuilder*

- Developed 'TheBuilder', a custom build system tailored for the 'TheTaaJ' operating system, utilizing GNU Make and C++ to streamline and automate the compilation process.
- Tools Stack: C/C++, Make build system.