Nandhish Thathanur Rajappa

Software Developer Engineer | C++ Specialist

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PROFILE SUMMARY

Highly skilled software engineer with 5 years of proven experience in **C++** high-performance application development. Expertise in **software architecture**, **OOP**, design patterns, **debugging**, and **Agile methodologies**, backed by a solid background in industrial automation and embedded systems.

SKILLS

Programming Languages: C, **C++**, **Python**, Java**,** SQL, **QML**

AI & ML: Natural Language Processing (NLP), Large Language Models (LLMs), Generative AI, Prompt Engineering, PyTorch, Langchain, RAG

Software Development: Agile-Scrum, **Git**, **CI/CD**, UML, **Object-Oriented Programming** (OOP), **OOAD**, GUI**,** STL**,** Design Patterns**,** GDB, Bash

Other: Qt, **QtQuick,** CMake, Visual Studio, MSVC, **Linux, Windows,** FPGA, Docker, MS Office

Languages: English (C1), German(A2)

PROFESSIONAL EXPERIENCE

Otto-von-Guericke-Universität, 04/2024 – 07/2025 | Magdeburg, Germany

Wissenschaftliche Hilfskraft

- Created and optimized custom kernels for **SQL query acceleration** on the Xilinx Vitis AI Engines.
- Rewrote and optimized XDMA **embedded** driver code in **C++** to enhance data transfer efficiency.
- Reworked an AxiDMA driver in **C++** for **Linux**, enabling seamless FPGA hardware integration.

Siemens, *Software Developer Engineer* 11/2021 – 09/2023 | Bengaluru, India

- Developed core components of the screen editor for **TIA Portal** using **C++**, **Qt**, CMake for **Windows**.
- Implemented **backend logic** for dynamic object creation and data flow management.
- Participated in **feature-level** design discussions and created detailed **UML** architecture diagrams.
- Led development and **mentored** junior team members to maintain project momentum and quality.
- Resolved **critical software defects**, improving system stability and performance.
- Worked in **Agile Scrum**, actively participating in sprints, stand-ups, and retrospectives.
- **Maintained** and managed the **codebase** for a key module, along with **CI/CD pipeline.**
- Conducted **rigorous code reviews** to uphold **coding standards** and reduce defects.

L&T Technology Services, *Software Engineer* 06/2019 – 10/2021 | Mysuru, India

- Developed features for a **patient monitoring application** (ECG, SpO2, BP) using **C++17, QML, Qt.**
- Wrote **unit tests** using **Google Test**, contributing to improved code coverage and reduced defects.
- Participated in **code reviews**, gaining exposure to best practices and ensuring code consistency.
- Investigated and resolved **software bugs**, supporting overall product stability during development.

EDUCATION

Otto-von-Guericke-Universität, 10/2023 – 10/2025 | Magdeburg, Germany
Master of Science, Digital Engineering | GPA: 1.7
Algorithm Engineering, Clean Code Development, Software Engineering, Software Testing

Vellore Institute of Technology, *Bachelor of Technology,* 05/2015 – 04/2019 | Chennai, India
Electronics and Communication Engineering | GPA: 2.0

PROJECTS

Brain Tumor Segmentation, *Pytorch, CNN, Python, Vitis AI, C++*
- Performed 3D image segmentation of MRI scans using a 3D U-Net architecture to detect brain tumor abnormalities.
- Hardware acceleration using **VCK5000 FPGA** DPUs.

Three-Player Chess, *Java, HTML, CSS*
- Designed an interactive multiplayer chess game with **Client-Server architecture.**
- Implemented the application with **clean coding principles**.
- Created end-to-end **CI/CD pipelines.**

NVM-Optimized B-epsilon-tree, *C++*
Enhanced write performance in non-volatile memory storage through optimization of B-epsilon-tree data structures.

Adaptive Sorting Experimentation, *C++*
Experimented with different sorting algorithms to optimize sorting of polygon data, efficiency through targeted adaptions.

Disease Prediction Chatbot, *Python, LLM, RAG, ChromaDB*
Developed a medical chatbot utilizing BioMistral-7B and Retrieval-Augmented Generation (RAG) for accurate disease diagnostics.

Flat Earth Believer Bot, *Python, LLM. Langchain*
- Built an NLP-driven chatbot incorporating advanced sentiment analysis to engage users.
- Hosted on **Docker** container