Shaun Joe Roy

Software Engineer

shaunjoeroy1234@gmail.com +919986182955 https://www.linkedin.com/in/shaun-joe-roy-aba817245/
https://github.com/joery0x3b800001 https://joery0x3b800001.github.io/portfolio-website/

Professional Summary

Software Engineer specialized in C++ and Qt/QML for developing mission-critical applications where high-performance architecture meets intuitive user design. My background also involves bridging the gap between sophisticated sensor data and low-level, hardware-aware systems to ensure seamless real-time responsiveness. Being interested in the intersection of core systems and machine learning, leveraging predictive intelligence to solve complex engineering challenges within autonomous environments.

Work Experience

LTX Launchtrax — *Bangalore, India*

Software Engineer 1 — *03/2025 - Present*

- **System Architecture**: Led architectural redesign of flight-planning systems, improving modularity and scalability for mission-critical workflows.
- **User Interface**: Optimized UI workflows, reducing aviator task completion time by 35%.
- **Performance**: Overhauled rendering pipelines, achieving a 60% reduction in scenario-generation latency.
- **Efficiency**: Restructured compute models for missile intercept forecasting, increasing throughput via improved resource utilization.

Firmware Engineer — *01/2025 – 03/2025*

- **Autonomous Navigation**: Integrated I2C, SPI, and UART protocols to fuse real-time Inertial Measurement Unit (IMU) and pressure sensor data; refined closed-loop control systems and navigation routines for Autonomous Underwater Vehicles (AUV).
- **Field Deployment**: Successfully deployed 50 AUV units to Navy Research, validating system reliability in high-stakes maritime environments.
- **Latency**: Refined navigation routines via DMA transfers, trimming latency by 35% and CPU load by 30%.

Software Engineer Intern — *10/2024 – 01/2025*

- **Linux Engineering**: Implemented threaded IP-layer integration for the Honeywell H-Guide n380, optimizing Linux pipelines for real-time protocol decoding and GPS/IMU extraction.
- **Defense**: Used Applied stochastic modeling to reconstruct trajectories, enhancing navigation reliability.
- **Simulation**: Partnered with systems team to validate navigation via Gazebo/ROS SIL testing, achieving 98% reliability across 10+ oceanic edge cases.

Education

Presidency University — *Bangalore, India*

Bachelor of Technology in Computer Science and Engineering — *11/2020 – 11/2024*

- **Thesis**: Advanced Heart Health Assessment through ML using KNN Algorithm.
- **Coursework**: Data Structures & Algorithms, Machine Learning, Computer Architecture, IoT.

Projects

Image-Based Search Engine — *Microsoft Azure, Flask, LLMs* — *Link*

- Constructed visual retrieval system leveraging Azure Computer Vision to match and fetch comparable visuals from indexed metadata.

Forage DB — *Algorithms, System Design* — *Link*

- Created RDBMS with CRUD operations, improving query speed by 40%.

LMMS — *Open Source Contribution, Qt/QML* — *Link*

- Active contributor to music production freeware development.

Skills

- **Languages**: C, C++11/14/17, Embedded C, Python, Java, Swift, Scala, SQL.
- **Frameworks & Libraries**: Qt/QML, PyTorch, TensorFlow, OSG, SIMDISS, Flask, Node, Boost, Hugging Face, MATLAB.
- **Graphics & Compute API**: Vulkan, CUDA, OpenGL, ImGui, OpenMP, Metal.
- **Systems & Protocols**: Bare Metal (ARM-A53), ROS, Gazebo Simulation, TCP, UDP, gRPC, I2C, SPI, UART, PWM.
- **Tools**: Docker, Linux, CI/CD, QEMU, Generative AI and AI-assisted development.