SHAUN JOE ROY

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About me

Engineer with specialization in deep learning architecture, autonomous systems, and high-performance GPU-accelerated computing. Specializing in embedded systems, GPU-accelerated computing using CUDA and Vulkan. Experienced in machine learning applications and proficient in Computer Vision, With a strong background in aerospace defense technology and simulation-based solutions work focuses on creating autonomous systems, with a keen interest in the inner workings of microprocessor architectures and operating systems.

Experience

Total Experience - 6 months

Application Engineer 1, *LTX LaunchTrax*
Jan 2025 - Present
Bangalore, Karnataka

- Developed and tested I2C communication protocols to connect pressure sensor and IMU for accurate sensor fusion in embedded systems.
- Optimized PID control for an AUV through live coding while also analyzing STM32 and BeagleBone architectures for processing power, I/O, and ecosystem suitability.
- Performed SIL testing for AUV simulations in Gazebo/ROS, estimating and identifying key parameters for software performance tuning.

Application Engineer Intern, *LTX LaunchTrax*
Oct 2024 - Jan 2025

- Built and integrated reusable, optimized code for cross-platform development, including embedded devices and GPS navigation systems (using Honeywell HGuide n380).
- Worked on Mission Planning and Debriefing Software for Tejas MK1A fighter jet.
- Worked on simulating navigation scenarios using various statistical-methods.

C++ Programming Intern, *NeuroNexus Innovations*
Aug 2024 - Sep 2024
Bangalore, Karnataka

- Created and managed various C++ programs, demonstrating proficiency in problem-solving, and debugging.
- Employed Git for source code management, including version control, branch management, and collaborative development, ensuring code integrity.

Education

Nov 2020 - Nov 2024

B.Tech Computer Science and Engineering

Presidency University

- Thesis on "Advanced Heart Health Assessment through Machine Learning Using KNN Algorithm".
- Relevant coursework in Machine Learning and Statistical Methods.

Projects

Image-Based Search Engine | *Microsoft Azure, Flask, LLMs*

- The Image-Based Search Engine project allows users to upload images, which are then analyzed for descriptive tags using Azure's Computer Vision service, the system searches for similar images in an Azure Search Index and displays results, including images and their descriptions, to the user.

Expert AI Healthcare System | *Python, Gradio, PyTorch*

- Led the team that developed a sophisticated machine-learning application for assessing heart health that used the KNN (K-Nearest Neighbours) algorithm.

ForageDB | *Qt/QML, Algorithms, System Design*

- A Simple Relational Database implementing the CRUD functionalities.

Technical Skills

Languages: C/C++, Python, Java, C#, Bash, arm assembly, Swift, Scala
Frameworks & Libraries: Pytorch, TensorFlow, OSG, VSG, SIMDIS, Django, Flask, Spring Boot, JavaFX, Node.js, Metal, Microsoft Azure
API: Vulkan, CUDA, OpenGL
Others: Gazebo, Docker, ROS

Languages

English: Proficient, **Malayalam**: Native, **Hindi**: Proficient, **Kannada**: Intermediate