

MARIB SULTAN

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SUMMARY

Curious engineer with a diverse hands-on experience on deep learning frameworks, computer vision tools, LLMs, frontend/backend technologies as well as DevOps tools. Looking forward to gaining further experience around LLMs, deep learning, and machine vision. Immensely interested in Cosmos, wants to witness humanity discover life beyond Earth.

EXPERIENCE

Folio3

Aug 2022 – Present

Lead AI Engineer

- Gathered client requirements to deliver **tailored AI-driven solutions** for 5+ clients, improving their process efficiency.
- Led cross-functional teams** (AI/ML, Backend, Frontend), successfully completing 5+ major projects.
- Fine-tuned LLMs** (Qwen2 & Llama3) on proprietary data to optimize performance for specific tasks using **Unsloth**.
- Deployed fine-tuned LLMs** in-house with **vLLM & Nvidia NIM**, boosting throughput by up to 10x.
- Enabled **LLM observability** for real-time monitoring and dataset generation using **LangFuse**.
- Developed a **coding & version-controlling agent** with LLM, RAG, and vector DB, reducing code manipulation by 5%.
- Leveraged **AST (abstract syntax trees)** with **LLMs** for syntactically correct source code manipulation.
- Architected an LLM agent orchestration framework** for domain-specific tasks, akin to LangGraph.
- Optimized video processing pipeline's** throughput by 15% using **Gstreamer** and Nvidia's hardware plugins.
- Configured **CI pipelines** on GitHub & Bitbucket for automated artifact publication to ECR and npm registry.
- Enhanced object detection throughput by 40% with **ONNX, TensorRT**, and batch inference.
- Designed a horizontally scalable** video tracking solution with **Kafka & Redis** for multi-camera setups.

Folio3

May 2021 – July 2022

Senior Software Engineer AI

- Developed an **intranet communication protocol** for Android-Desktop sync using **ZeroMQ** sockets and multithreading.
- Reduced compute load of video capture by 95% for **8+ cameras** with efficient **Gstreamer pipelines**.
- Devised a **custom image processing algorithm** for line-edge detection to help in tennis game outcome calculations.
- Packaged a **PyQT-based desktop application** for Linux as a Debian installer.
- Developed **framework-agnostic JavaScript widgets** with a custom webpack config.
- Built backend services for a social media platform using **NestJs, Prisma, MongoDB**.

Systems Limited

June 2017 – May 2021

Software Engineer

- Developed 3 custom web applications using **Angular** and **React**.
- Built and published **2 cross-platform mobile apps** on AppStore & PlayStore using **Ionic** and **Cordova**.
- Integrated **Twilio's SMS API** for touchless delivery, boosting delivery efficiency and customer satisfaction.
- Improved maintainability with **unit tests** using React Testing Library and Jest.

EDUCATION

Institute of Business Management

2021

MBA in Marketing

FAST-NUCES

2017

BS in Computer Science

TECH TALKS

Fundamentals of Neural Networks – FAST-NUCES

- Delivered a session on neural network fundamentals, focusing on intuitive concepts behind network operation & learning.

A Gentle Intro to LangChain – NED University

- Conducted a session on LangChain, covering Chains and vector databases for RAG applications.

How Video Works – Folio3

- Delivered a tech session at Folio3 on video technology, aiming to build a deep understanding of image and video compression and leveraging hardware to accelerate the process. The session also briefly explored video streaming via RTSP and HLS.

CERTIFICATIONS

Certified TensorFlow Developer

2024

<https://www.credential.net/6c6569bc-4f7c-4ed1-a442-c3a61e4ad7a1gs.bporbu>

TECHNOLOGIES USED

Python, OpenCV, NumPy, PyTorch, TensorFlow, ONNX, TensorRT, Docker, Kafka, Redis, PyInstaller, Gstreamer, LLMs, ZeroMQ, LangChain, LangFuse, Unsloth, vLLM, CVAT, ClearML, React, Angular6, Ionic3, Highcharts, Typescript, ESLint, MongoDB, NodeJS, NextJs, Prisma, Webpack, GitHub & Bitbucket Workflows, Jest, RTL