

MD KARIMUL ISLAM

Software Engineer | AI/ML Engineer | Computer Vision

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■ INTRODUCTION

Software Engineer with hands-on experience building application modules, integrating third-party APIs (OpenRouter, OpenAI), and shipping five end-to-end ML-backed systems with clean, maintainable code. Production experience with FastAPI services, database-backed pipelines, and multi-agent automation.

■ HANDS-ON EXPERIENCE

Internship — Oleyn PTE Ltd. (Oleyn.ai) | Prompt Engineering Intern | Remote

Jan – Apr 2026

- Generated business leads and pitched AI chatbot solutions to prospective clients (including Rangs eMart) using OpenRouter and OpenAI APIs.
- Built and configured conversational bots end to end — LLM settings, knowledge base, prompt sections, and escalation rules — for real business use cases; the client didn't select my bot, but I shipped it fully and learned the stack.
- Contributed to an omnichannel customer-engagement platform unifying Facebook, Instagram, TikTok, Gmail, website chat, Telegram, and WhatsApp into a single inbox.
- Configured multi-agent handling — multiple human agents authorized to reply, private agent-to-agent handoff, and manual AI on/off per conversation.
- Set up automatic capture of customer name, number, and other details into a structured dataset.
- Learned:** Prompt design for both lead-generation and support use cases, and how to configure a full omnichannel bot stack (LLM settings, knowledge base, social/WhatsApp integration, analytics) from the ground up.

Innovative Idea No. 1 — GeoChain | Rajshahi

Apr – Sep 2025

- Built a blockchain-ready property marketplace with identity verification workflows; secured a 2nd UIHP grant (ICT Division & World Bank-backed, two-time grantee in 12 months).

Innovative Idea No. 2 — VetConnect | Rajshahi

Oct 2024 – Mar 2025

- Launched Bangladesh's first digital veterinary platform — GPS-based vet discovery, telemedicine, and an e-commerce prototype — in 6 months, UIHP-funded (ICT Division & World Bank).

■ SKILLS

- Programming Languages:** Python, C++, C, SQL
- Databases:** MySQL, PostgreSQL, SQLite
- API Integration:** REST API design & consumption (OpenRouter, OpenAI, FastAPI services)
- Data Structures & Algorithms:** Trees, Graphs, Priority Queues, Dynamic Programming, BFS/DFS
- Data Preprocessing:** Homology-aware clustering (MMseqs2), sequence-window modelling, data augmentation & normalization
- ML / DL:** PyTorch, TensorFlow / Keras, scikit-learn
- Architectures:** CNNs, DenseNet, ResNet, MobileNet, EfficientNet, 1D-CNN
- CV / XAI:** OpenCV, MediaPipe, Grad-CAM, Integrated Gradients, LIME, ONNX
- LLM / GenAI:** Prompt Design, Chain-of-Thought, RAG, AI Agents, LLM Evaluation
- Tools / Serving:** VS Code, Git, FastAPI, Docker, Linux, Streamlit, Tesseract OCR

■ EDUCATION

B.Sc. in Computer Science & Engineering | Varendra University, Rajshahi

Sep 2022 – Aug 2026

- CGPA 3.90 / 4.00 · Merit Scholarship (ranked 13th of 193 in cohort)
- Hult Prize Campus Team Leader (2026)

■ PUBLICATIONS

- MEFNet** — Hybrid CNN for Waste Classification + XAI, IEEE PECCII 2026 (First Author) — 97.71% accuracy, outperformed MobileNetV2/V3, EfficientNetB0, and ResNet50V2 (competitive with heavier ConvNeXt-Tiny at 97.94%).
- FusionNet** — Deepfake Detection Framework, VIJIR Vol. 1(2), 2025 (First Author) — extended from a UCICS 2025 conference paper — 91.22% accuracy, AUC 0.98, F1 92.56%, FGSM-tested.
- LitePhospho** — XAI CNN for Phosphorylation Prediction, Undergraduate Thesis, Completed & Presented (First Author) — manuscript in preparation for Briefings in Bioinformatics; homology-aware benchmarking, Integrated Gradients.
- Enhanced MobileNetV1** for Early Autism Detection, IEEE QPAIN 2025 (Co-Author).

■ PROJECTS ARCHIVE

- Agentic Research Assistant** — RAG-based Q&A over research papers with page-level citations, self-scored for faithfulness (FAISS, Groq).
- Multimodal Visual Analyst** — vision-language app for image Q&A and structured JSON extraction (Llama 4 Scout).
- Audio Intelligence** — turns recordings into transcripts, structured reports, and a Q&A chat (Whisper + LLM).
- Churn Prediction (MLOps)** — scikit-learn model served with FastAPI with a live dashboard, Docker, and CI.
- LitePhospho** — explainable phosphosite predictor served via ONNX with a live Streamlit demo.

■ ACHIEVEMENTS

- First-author publications: VIJIR 2025 and IEEE PECCII 2026 (presented).
- Graduated August 2026 with CGPA 3.90/4.00; Merit Scholarship recipient, ranked 13th of 193 in cohort (2022–present).
- 2× UIHP Innovation Program grantee (ICT Division & World Bank) — funding for GeoChain and VetConnect.

■ CERTIFICATIONS

- Google AI Agents Intensive (5-Day) · Machine Learning with Python · Data Visualization with Python · Google Analytics

■ LANGUAGES

- Bengali — Native · English — Professional working proficiency