

# Md. Kawsar Ahmad

Software Engineer III

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## Summary

Senior Software Engineer with 4+ years of experience building scalable backend and full-stack systems using Laravel, Vue.js, REST API, and AWS. Experienced in AI/ML integration, microservices, FastAPI design, and cloud-native architectures, delivering secure, high-performance, and production-ready applications. Proven experience working on international, government, and defense projects, designing and implementing robust systems with strict security, operational reliability, and compliance standards. Skilled in designing robust APIs, optimizing databases for large-scale operations, implementing CI/CD pipelines, and integrating complex third-party services.

## Skills

### Backend & API Development

Laravel, PHP, FastAPI, Python, GraphQL, REST APIs, Monolith & Microservices, API architecture & distributed systems, Domain-Driven Design.

### Frontend Development

Vue.js, Astro, Inertia.js, Livewire, Vuex, Pinia, Nanostore, JavaScript (ES6+), TypeScript, Jinza

### Databases & Storage Systems

MySQL, PostgreSQL, SQLite, Redis(caching/queues), Neo4j, AuraDB, ChromaDB, FAISS

### Cloud & DevOps

AWS Services & Infrastructure, Nginx, Cloudflare management, Docker, Git workflows, CI/CD pipelines

### Testing & Quality Engineering

Unit / Feature Testing, PHPUnit, API testing (Postman, APIdog, Swagger)

### AI/ML & Emerging Technologies

LangChain, RAG pipelines, LLM finetuning & inference optimization, Generative AI, Agentic AI / AI agents, NLP processing, Edge Computing and local AI-Driven system, AI Driven Systems

## Educational Qualification

- BSc in Computer Science & Engineering - Bangladesh University (2019-2023)  
CGPA: 3.88/4.00
- Higher School Certification Examination - Navy College, Dhaka Cantonment (2017-2018)  
GPA: 4.87/5.00

# Experience

## Mediusware LTD - Software Engineer II

July 2024 – Present (1 year 6 months)

- Developed scalable Laravel-based applications, modernized legacy PHP code, optimized MySQL schemas, and implemented automated testing.
- Developed AI-driven applications and Chrome extensions enhancing usability and predictive functionality.
- Collaborated with Hotelinking (a global hotel connectivity platform) via staff augmentation, serving as an Integration Specialist and professional Software Engineer.
- Integrated third-party payment gateways and external APIs, implemented job queues and asynchronous task processing.
- Built and deployed containerized services using Docker, GitHub Actions CI/CD, and AWS infrastructure.

## Nogor Solution Ltd - Software Engineer I

September 2022 – June 2024 (1 year 9 months)

- Designed and developed backend services and RESTful APIs for government projects, in-house web applications, and confidential client systems.
- Collaborated on a large-scale distributed system for Bangladesh Navy Ration and Clothing Management, handling complex workflows, inventory tracking, and reporting.
- Implemented database design, schema refactoring, and query optimization to support large-scale operations efficiently.
- Contributed to confidential and high-impact projects requiring strict adherence to security and operational protocols.
- Acted as a Support Engineer, providing troubleshooting, maintenance, and operational support for live systems.

## Onix Computers System - Jr. Web Developer

January 2022 – September 2023 (9 months)

- Designed and developed backend service and RESTful APIs for the e-commerce project, in-house web applications.
- Improved database design, schema refactoring, and query optimization to support large-scale operations efficiently.
- Integrated third-party e-commerce services into the Web application.
- Developed new challenging features for the existing e-commerce web application and optimize the web application enabling seo and metadata.
- Developed scalable campaign modules to manage high traffic and large-scale events efficiently.

# Projects

## Project Name: Housebrand AI

Housebrand.AI is a furniture marketplace connecting designers, manufacturers, and clients, where I have contributed to developing secure, role-based modules for management, marketing, events, and content, including project and task tracking, proposals, invoicing, document management, designer portfolios, inspiration galleries, as well as marketing tools for email campaigns, segmentation, and notice management for announcements.

### Tech Stack:

- Backend: Laravel, REST API, Domain Driven Design
- Frontend: Vue.js, Blade Templates, TailwindCSS
- Database: MySQL
- Infrastructure: Docker

Live URL: <https://housebrands.com/>

## Project Name: Hotelinking

Hotelinking is a large-scale global hotel management hub in Spain, where I worked as an Integration Specialist, integrating new and emerging services into the existing system. I also led the development of the new version of the platform from scratch on AWS services and cloud infrastructure, including the migration from the legacy system, ensuring a secure, scalable, and high-performance solution.

### Tech Stack:

- Backend: Amplify Gen 2, Laravel, REST API, GraphQL
- Frontend: Astro, Vue.js, Nanostores
- Database: DynamoDB, MySQL (Old Version)
- Infrastructure: AWS, Docker

Live URL: <https://www.hotelinking.com/en/>

## Project Name: Linktiva (AI-powered Chrome extension)

Linktiva is a Chrome extension that automates backlinking for digital marketing, acting as an AI-powered tooling agent. I developed and maintained Laravel backend APIs for its React-based extension, including RBAC, admin dashboards, and modules for prompts, plans, and history. Built a platform-wide automation system using Laravel job queues and integrated OpenAI for contextually relevant anchor texts, along with a Stripe subscription system for solo and team plans, and Google API integrations for seamless Sheets and Docs management.

### Tech Stack:

- Backend: Laravel, REST API, Google Client services
- Frontend: Blade Templates, Livewire, TailwindCSS
- Database: MySQL
- Infrastructure: Docker

Live URL: <https://linktiva.com/>

## **Project Name: FirstStep AI**

FirstStep AI is a large-scale offline RAG system enabling training of custom LLMs using internal knowledge. I built the end-to-end RAG pipeline, including data ingestion, embeddings, retraining, retrieval-to-response generation, fine-tuned LLMs, orchestrated LangChain/LangGraph workflows, and implemented agentic Ollama reasoning. I also developed a scalable FastAPI + Uvicorn backend with Streamlit UI, later adding batch inferencing and edge-level optimizations for high-throughput, low-latency AI inference.

### **Tech Stack:**

- Backend: FastAPI, Ollama, LangChain, Agentic AI Orchestration, Batch Inferencing, TensorRT -LLM, RAG Pipelines, CUDA optimization
- Database/Vector Store: FAISS, ChromaDB, Conversational Memory
- Infrastructure: Edge Computing Device (Jetson Orin Agx & Jetson Orin Xavier)
- Models: Llama3.2, gemma2, nomic-embed, llama-chatQA

**Live URL:** [https://gitlab.com/firststep\\_dev/firststep\\_ai\\_assistant](https://gitlab.com/firststep_dev/firststep_ai_assistant)

## **Project Name: Bangladesh Navy ration and Clothing management system**

A large-scale distributed system for ration distribution, clothing inventory, and supply chain operations for the Bangladesh Navy. I developed and maintained Laravel backend APIs with a Vue.js frontend, implemented confidential features for inventory and ration management, optimized reporting workflows, and provided ongoing support as a Software Support Engineer, resolving issues and ensuring smooth system operation. I also streamlined operational processes, automated workflows, and ensured data consistency, delivering a secure, maintainable, and reliable system.

### **Tech Stack:**

- Backend: Laravel, REST API, Distributed System, Domain Driven System Architecture
- Frontend: Vue.js, Blade Templates
- Database: MySQL
- Infrastructure: CenOs servers, Local sync, Distributed System

## **Project Name: FBCCI (Panel Management System)**

FBCCI is a comprehensive web application managing operations for the Federation of Bangladesh Chambers of Commerce & Industry, including panel management, administrator roles, and organizational workflows. I collaborated on backend API development and frontend integration, contributed to panel and user role management, and implemented scalable, secure, and responsive modules. I also ensured code quality, proper documentation, and smooth Agile collaboration, delivering a reliable platform for national-level organizational management.

### **Tech Stack:**

- Backend: Laravel, REST API
- Frontend: Vue.js, Blade Templates
- Database: MySQL
- Infrastructure: Docker

## **Project Name: Intelligent Business Hub - AI-Powered Advanced RAG System**

Intelligent Business Hub is an AI-powered, highly orchestrated RAG system designed for independent environments, capable of running locally, in Docker, or via API integrations. I implemented multiple RAG pipelines, including Naive RAG, Agentic RAG with PDF summarizers, Chain-of-Thought reasoning, web search, multimodal RAG for voice and image processing, and advanced Graph RAG for complex multi-hop queries. I also developed robust session management, history tracking, and AI guardrails, delivering a flexible, secure, and high-performance platform for advanced knowledge management.

### **Tech Stack:**

- Backend: FastAPI, Unicorn, Guardrails, RAG pipelines (Naive, Agentic, Multimodal, Graph), CoT
- Frontend: HTML, JavaScript
- Database: ChromaDB, Neo4j, Conversational Memory, Session Memory
- Infrastructure: Local, Docker, Cloud
- Models: Qwen, Gemma, Llama3.2:latest, OpenAI, NER, Colnomic embed, BGE Reranker

## **Certifications**

- **Specialization on Machine Learning**  
Organization: Stanford University Online, Deep learning.AI
- **Responsible AI: Applying AI Principles with Google Cloud**  
Organization: Google
- **Attention Mechanism - Artificial Neural Network**  
Organization: Google
- **Machine Learning – Enhancing Digital Government and Economy Project 2023**  
Organization: Dhaka University IIT, BCC, EDGE
- **Introduction to Human-Computer Interaction(HCI)**  
Organization: Educative
- **Web App Development using Laravel & Vue JS**  
Organization: BITM, BASIS
- **AWS Cloud Technical Essentials**  
Organization: Coursera

## **Awards**

- 2nd Runner up (IT Olympiad), 2nd ACC IT Carnival and Science Festival. Dhaka
- Champion (Hackathon), 1st BUPC, Bangladesh University, Dhaka

## **Workshop & Training**

- System Trainer, Institute of Diploma Engineers of Bangladesh.  
Training Event: Training on Online Portal Management System of IDEB