

AL AMIN KOUSER

Software Engineer

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Professional Summary

Full-Stack Software Engineer with over 5 years of experience building scalable web applications, agentic AI systems, and cross-platform desktop utilities. Proven track record in designing high-performance RAG pipelines, custom Model Context Protocol (MCP) servers, and zero-downtime GCP infrastructure using Python (FastAPI, Flask), JavaScript/TypeScript (Next.js, Node.js), and modern vector databases.

Technical Skills

Languages: Python, JavaScript/TypeScript, HTML, CSS, Zig, Go, Dart, SQL, Bash Scripting, Lua

Databases: PostgreSQL, SQLite, MongoDB, Redis, Firestore, Weaviate, SurrealDB, Qdrant, ElasticSearch, PGlite

Frameworks: FastAPI, Pydantic AI, Jinja2, LangChain, Express.js, Streamlit, Flask, Flutter, Next.js, Svelte, Astro

Tools & Infrastructure: Git, GCP, GitHub Actions, CI/CD, Nginx Proxy Manager, Caddy, Linux Shell

Architecture & Methodologies: RESTful APIs & GraphQL, Microservices Architecture, Test-Driven Development, Agile / Scrum, System Design & Data Modeling

Platforms & App Development: Desktop Application Frameworks (Electron), Browser Extensions (Manifest V3), Mobile Development (Flutter)

Work Experiences

Software Engineer — Makebell | Hong Kong (Remote)

May 2023 — May 2026

- Architected multi-persona **AI chatbots** for university students, faculty, and administrative staff, streamlining campus-wide information retrieval and support workflows.
- Engineered a high-performance **RAG pipeline** by indexing university academic papers in **Vector Databases**, reducing literature search times by hours through semantic query matching.
- Built autonomous **AI agents using LangGraph** to streamline patent drafting and novelty verification.
- Developed a custom **Model Context Protocol (MCP) server** to index and query **US Patent datasets** seamlessly within agentic research workflows.

Full Stack Developer — Petapator | Hong Kong (Remote)

July 2022 — May 2023

- Maintained a **4.7/5 rating** on the **Chrome Web Store** by engineering an **AI-driven patent research extension** that automates analysis and relevance scoring.
- Streamlined research workflows by enabling users to query **patent datasets** and export **scored result sets** directly into **CSV format**.
- Implemented **secure Firebase Authentication** compliant with **Chrome Web Store Manifest V3** security standards, overcoming platform-specific auth constraints for extension environments.

Flutter Developer & Project Manager — Ricciwawa | Hong Kong (Remote)

April 2021 — June 2022

- Orchestrated a **zero-downtime server migration** across **Google Cloud Platform (GCP)** projects, maintaining uninterrupted production availability and system stability.
- Engineered an automated server health monitoring pipeline using **Bash** and custom alerts, reducing mean time to detection (**MTTD**) for backend endpoint failures and accelerating issue triage.

- Managed end-to-end delivery of **Flutter** apps and **Django** APIs, driving **on-time releases** through effort estimation, resource allocation, and structured QA testing.
- Automated frontend deployments by architecting a **GCP CI/CD pipeline** for **React** applications, eliminating manual release overhead.

Projects

Zero Agent Demo ⇄ — *Pydantic AI, FastMCP, LLama CPP, Playwright, REST APIs, MCP, SerpAPI* 2026 — Present

- Engineered a **Local Agentic Application** using **Pydantic AI** and **FastMCP**, connecting a **LLama CPP** model to custom toolsets and external APIs.
- Integrated **Model Context Protocol (MCP)** with toolchains including **Playwright** browser automation, **SerpAPI**, **Firecrawl**, and **Vault** for secure context retrieval.
- Built custom **Python function-calling modules** for automated email parsing and HTTP status updates, exposed through a **lightweight web interface**.

Personal Website ⇄ — *FastAPI, Deno, Jinja2, Redis, Firestore, Pagefind, Typst, Vercel, GitHub Actions* 2025 — Present

- Engineered **FastAPI/Vercel** serverless web app, achieving **near-zero latency** dynamic page delivery.
- Reduced static asset payloads by **40%** via automated **GitHub Actions** minification pipelines.
- Automated **resume** compilation using **Typst & CI/CD**, eliminating manual PDF generation entirely.
- Architected a custom **Deno static doc builder** with integrated **Pagefind search** and **Mermaid diagrams**.

PetapatorDemo ⇄ — *Electron, Node.js, PGLite* 2026

- Built a desktop demo application that **cuts patent research time from hours to minutes** by automating Google Patent retrieval and AI relevance sorting.
- Planned as a **standalone desktop utility** to **expand on the concepts** of the **Patent Search Chrome Extension** with advanced local workflow tools.
- Engineered an offline-first architecture leveraging **PGLite** and **Electron** for lightweight local data management.

Education

LL.M. in Maritime Law — Bangladesh Maritime University 2024 — 2025

CGPA: 3.78 / 4.00 (Ranked 1st out of 26 students)

LL.B. (Honours) in Maritime Law — Bangladesh Maritime University 2019 — 2023

CGPA: 3.65 / 4.00 (Ranked 3rd out of 35 students)

Certificates & Trainings

- **The Bits and Bytes of Computer Networking** ⇄ — Google April 2021
- **Getting Started With Google Apps Script** ⇄ — Coursera Project Network January 2021
- **Technical Support Fundamentals** ⇄ — Google September 2020
- **Doing more with Google Sheets** ⇄ — Google August 2020
- **Introduction to Bash Shell Scripting** ⇄ — Coursera Project Network August 2020