

MUHAMMAD HATTA ABDILLAH

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Jakarta, Indonesia

PROFILE

AI Engineer with hands-on experience building **tools with LLM-based and agentic AI systems** for **data-driven** business & consulting and medical use cases. Currently developing AI-powered internal platforms that support strategic planning, people development, and organizational analysis by combining large language models with structured and unstructured data and domain knowledge. Experienced in designing **RAG and GraphRAG architectures**, integrating knowledge graphs, and deploying end-to-end AI pipelines from data ingestion to evaluation. Strong background in Programming, Python (Data), FastAPI, vector databases, and cloud platforms (GCP & Azure).

EDUCATION

University of Sumatera Utara (USU) – Medan, Indonesia

Aug, 2021 – Jul, 2025

Bachelor of Computer Science, in Information Technology

- Cumulative GPA : 3.91 / 4.00
 - Thesis: Implementation of GRAPH-RAG in Developing a Multimodal Biomedical Chatbot using LLM, LangChain, and Neo4j. Successfully processed and analyzed the complex MIMIC IV v3.1 dataset to build a robust knowledge base, demonstrating advanced data handling and analysis capabilities.
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EXPERIENCE

PT Pengembang Sistem Manajemen – Jakarta, Indonesia

Nov, 2025 – Present

AI Engineer

- Develop **AI-powered internal platforms** to support data-driven strategic and organizational consulting using **LLM & RAG** based systems.
 - Build and deploy **agentic AI workflows** (FastAPI, OpenAI LLMs, Qdrant) that generate structured outputs based on company data, organizational structures, and internal knowledge modules.
 - Implement agentic AI services in **HSF (Human Plus Strategic Framework)** to automate Goal Roll Down and People & Organization Development processes, enabling faster generation of department-level strategic goals and organizational insights from structured company data and internal frameworks.
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PT Telkom Indonesia (Persero) Tbk – Jakarta, Indonesia

Sept, 2024 – Des, 2024

Software Engineer Intern

- **System Integration & Optimization:** Engineered backend services using **Java (Play Framework)** and **Go**, implementing a **Redis caching solution** to improve application responsiveness and scalability for a **national-scale e-procurement system**.
 - **Cloud Infrastructure & Collaboration:** Contributed to a **large-scale migration to Google Cloud Platform (GCP)**, performed **PostgreSQL query optimization**, and worked within an **Agile development environment** alongside the GovTech Procurement team.
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PT Bukit Makmur Mandiri Utama (BUMA) – Jakarta, Indonesia

Feb, 2024 – Jun, 2024

AI & Application Developer Team Intern

- **End-to-End AI Solution Development:** Designed and developed an **end-to-end RAG-based AI solution** to automate internal business processes, covering data preparation, model testing, and performance evaluation.
 - **Model, Platform & Agent Integration:** Integrated a **RAG-based LLM (GPT-4)** into existing enterprise workflows and built a full-stack application (.NET & ReactJS) using **Semantic Kernel** to orchestrate AI components and implement **agent-based (ReAct) workflows**.
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Awardee Mobility Program to UiTM – Shah Alam, Malaysia

Mar, 2023 – Aug, 2023

- Selected as one of the **information technology students from Universitas Sumatera Utara** for a **student exchange program** at **Universiti Teknologi Mara (UiTM)**, completing a semester of study abroad.
- Achieved GPA : 3.61 / 4.00
- Relevant Courses ; Software Engineering - Theories and Principles & Image Processing

PERSONAL & TEAM PROJECTS

Multimodal Biomedical Chatbot (Thesis Project) – Medan, Indonesia

Apr, 2025 – Jun, 2025

Software Developer – Data Engineer

- **End-to-End AI System Deployment:** Architected and built a conversational AI system from the ground up. Designed and implemented an ETL data pipeline to preprocess and integrate the challenging **MIMIC-IV** medical dataset into a Neo4j Knowledge Graph, ensuring efficient and reliable data flow for model orchestration.
- **AI Orchestration:** Developed the core logic using **LangChain** to orchestrate interactions between a state-of-the-art LLM (**Google's Gemini 2.5 Pro**) and the knowledge graph, served via a **FastAPI** backend. Including the implementation of **multi-step planning** and decision-making workflows.
- Validated system performance using the RAGAs framework, achieving exceptional scores for **faithfulness (97%)**, **context precision (85.7%)**, and **answer correctness (80.5%)**, proving the chatbot's reliability in handling complex biomedical information.

BUMA AI Chatbot – Jakarta, Indonesia

May, 2024 – Jun, 2024

Software Developer

- Developed an **AI Chatbot** leveraging Azure Services (GPT-4, Cognitive Search, Blob Storage) to implement a **Retrieval Augmented Generation (RAG)** system with secure, role-based access.
- Created a **ReactJS frontend** integrated with Azure Semantic Kernel and a .NET backend, supporting file uploads and advanced Q&A for a seamless user experience.

Dental Management System – Shah Alam, Malaysia

Jul, 2023

Software Developer

- **Co-created a User-Centric Health Solution:** Collaborated with a team of Malaysian students to design and develop a Dental Management System aimed at empowering users to proactively manage their oral health.
- **Engineered the Core AI Feature:** Led the development of the AI-driven disease detection system. Train a CNN model on over 5,000 images, achieving **87%+ accuracy** in classifying four types of dental diseases, providing real value to users.

ORGANISATIONAL EXPERIENCE

Google Developer Group on Campus (GDGoC) USU – University Scope

Sep, 2023 – Jul, 2024

Staff of Technical Division

- Contributed to curriculum design and event organization, achieving a **22% improvement in student engagement** and a **35%+ growth in workshop participation**.

SKILLS & TOOLS

- **AI & Generative AI** : LLMs, Generative AI, NLP, Prompt Engineering, **RAG, GraphRAG**, Agentic AI, LangChain, LangGraph, Semantic Kernel, Embedding Models, Computer Vision, **Model Evaluation (RAGAs)**.
- **Backend & Cloud** : Python (**FastAPI**), Go, Java, RESTful API Development, Microservices Architecture, Redis (Caching, Pub/Sub), Docker, CI/CD (GitLab & GitHub), **Cloud Platforms: GCP, Azure**
- **Database & Analytics** : SQL (PostgreSQL, MySQL), **Neo4j (Knowledge Graph)**, **Vector Databases (Qdrant, Pinecone)**, ETL Pipelines, Data Processing & Cleaning, Pandas, NumPy, Feature Engineering, **MLflow (experiment tracking – exploratory)**
- **Soft Skills** : Analytical Thinking, Problem Solving, Cross-functional Collaboration, Communication, Adaptability, Continuous Learning
- **Languages** : Indonesian (Native), English (Proficient), Malay (Proficient), Arabic (Conversational), German (Basic)