Muhammad Luthfi Attaqi

Upcoming Engineering Graduate

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SUMMARY

An upcoming Information Technology graduate from Universitas Gadjah Mada (expected August 2026) specializing in Full-Stack Development and AI Engineering. Experience as a Software Engineering and AI Engineer Intern, supported by several impactful academic projects, has strengthened my technical foundation. My focus centers on developing intelligent, data-driven solutions powered by cutting-edge AI, including agentic workflows, RAG systems, and Large Language Models (LLMs). I am passionate about engineering end-to-end solutions that bring advanced AI capabilities into real-world applications to solve complex industrial challenges.

EDUCATIONAL BACKGROUND

Bachelor of Information Technology — Aug 2022 – Aug 2026 (*Expected*)
Universitas Gadjah Mada (UGM) — *Daerah Istimewa Yogyakarta*

- Current GPA: **3.65**

WORK EXPERIENCE

IT Upstream Application Intern — Dec 2025 – Apr 2026
PT Pertamina Hulu Rokan — *Riau*

- **Engineered** a data ingestion pipeline to construct a large-scale **Knowledge Graph** from complex unstructured documents, mapping **5,300+ domain-specific entities** and **8,200+ relational edges** extracted from over **60,000 entity chunks**.
- **Designed and developed** a Domain-Expert AI Agent powered by **GraphRAG**, achieving a **1.0 MRR** and **0.93 Context F1-score** by integrating graph traversal with semantic search to resolve complex multi-hop reasoning queries.
- **Developed** an AI-driven Resource Loading and Optimization microservice using **Python FastAPI**, integrating **Natural Language Processing (NLP)** and **Genetic Algorithms** to automate complex resource allocation based on historical operational data and past project executions.

Full-Stack Developer – Contract — Sep 2025 – Dec 2025
Roetix — *Daerah Istimewa Yogyakarta*

- **Designed and developed** responsive frontend public pages using **React**, **Vite**, and **Tailwind CSS**, covering Event Detail, Category Selection, User Tickets, and Transaction History interfaces integrated with a virtual queue system and payment gateway.
- **Built** a full-stack, low-latency Gate Access System using **JavaScript**, **PHP**, and **MySQL** on a local network, enabling reliable real-time barcode scanning for on-site event management.
- **Engineered** a high-performance Interactive Seat Map using **React**, optimizing rendering logic to remain lightweight and responsive while visualizing **2,000+ seat data points**.

Corporate Application Intern — Dec 2024 – Feb 2025
PLN Icon Plus — *DKI Jakarta*

- **Developed** a Workload & Task Management System, a full-stack solution using **Next.js**, **Node.js**, and **PostgreSQL**, to improve task tracking and workforce optimization.
- **Implemented** a secure **Role-Based Access Control (RBAC)** system with **JWT authentication** and middleware authorization in **Express.js** to distribute tasks securely based on user roles.
- **Designed and implemented** a Workload Calculation Model using **Multi-Criteria Decision Analysis (MCDA)**, optimizing task allocation through a data-driven approach.

Vector and Matrix Theory Tutoring Assistant — Aug 2023 – Dec 2023
DTETI, Fakultas Teknik, UGM — *Daerah Istimewa Yogyakarta*

- **Guided** over **200 underclassmen** through comprehensive group tutoring sessions.
- **Evaluated and graded** student assignments, providing detailed and constructive feedback to improve academic performance and foster critical thinking skills.

ORGANIZATIONAL EXPERIENCE

Staff, Sport and Art Creation Ministry Mar 2023 – Nov 2024
BEM KMFT UGM

- **Facilitated** faculty-wide sports and arts programs, events, and student activity initiatives to foster creative expression and student engagement.
- **Managed** talent development by coordinating scouting, mentoring, and preparation of faculty athletes and artists for major university-level competitions.
- **Drove** inter-organizational collaboration through student association forums to align programs and maintain a supportive ecosystem.

Head of Talent and Interest Department Sep 2023 – Aug 2024
Keluarga Mahasiswa Riau Gadjah Mada (KEMARIGAMA)

- **Directed** internal inter-batch games and external tournaments, including futsal and basketball, to strengthen relationships among regional student groups.
- **Managed** cultural and arts programs, including music group coordination, talent showcases, and participation in university cultural festivals.
- **Led** department operations by supervising team members in planning regular gatherings and events to ensure active member participation.

Coordinator of Technical Division Jul 2023 – Feb 2024
Lustrum DTETI XII

- **Directed** competition operations by defining rulebooks, coordinating timelines, selecting judges, and overseeing smooth competition execution.
- **Executed** live broadcasting by deploying OBS streaming systems and multimedia infrastructure for seamless competition coverage.
- **Supervised** event execution by monitoring live progress, enforcing rules, and resolving real-time technical issues.

Chairperson Nov 2023 – Feb 2024
Gadjah Mada Flies to Riau 2024

- **Directed** all project activities and events, ensuring timely completion and adherence to quality standards.
- **Acted** as the primary liaison between sponsors, university officials, and local partners to facilitate clear stakeholder communication.
- **Monitored** project milestones, identified potential issues, and provided regular progress updates on successes and challenges.

Staff, Electropreneur Division Nov 2022 – Dec 2023
Keluarga Mahasiswa Teknik Elektro dan Teknologi Informasi (KMTETI)

- **Managed** an incubation program by broadcasting service offerings and bridging clients with Night Login, DTETI's Software House BSO.
- **Created** visual content, including promotional posters and Instagram posts using Figma, to support division communication needs.
- **Supported** division operations by collaborating with team members to execute internal initiatives and maintain consistent workflows.

NON-FORMAL EDUCATION

AWS Academy Graduate – AWS Academy Cloud Foundations – Course Oct 2024 – Nov 2024
Amazon Web Services (AWS)

- Learned foundational **cloud computing** concepts and the **AWS Cloud Adoption Framework**, covering **AWS Global Infrastructure** (Regions, Availability Zones, Edge Locations), core compute services (**Amazon EC2**, **AWS Lambda**, **Elastic Beanstalk**), storage (**Amazon S3**, **EBS**, **EFS**), and database services (**RDS**, **DynamoDB**, **Redshift**, **Aurora**).
- Gained hands-on understanding of **AWS security** and the **Shared Responsibility Model** via **IAM**, networking with **Amazon VPC** and **CloudFront**, high-availability architecture using **Elastic Load Balancing**, **EC2 Auto Scaling**, and **CloudWatch**, plus AWS pricing philosophy and billing/support best practices – preparing for the **AWS Certified Cloud Practitioner** exam.

- Skills: Cloud Computing, Amazon Web Services (AWS), AWS Identity and Access Management (IAM), Amazon EC2, Amazon S3, Amazon VPC, Cloud Architecture, Cloud Security

ETL and ELT in Python – Course — Oct 2024 – Nov 2024
Datacamp

- Learned to design and build end-to-end **data pipelines** in Python, extracting data from structured and unstructured sources (CSV, JSON, APIs) using **pandas**, applying transformation logic, and loading results into destinations such as **SQL databases** and **Parquet** files.
- Developed practical skills in differentiating **ETL vs. ELT** architectures, writing reusable pipeline functions, and applying professional-grade reliability practices including **logging**, **exception handling**, **unit testing**, and pipeline monitoring to ensure data integrity.
- Skills: Python, ETL/ELT Pipelines, pandas, SQL, Data Engineering, Data Pipeline Design, Unit Testing, Logging & Monitoring

Dimensionality Reduction in Python – Course — Aug 2024 – Sep 2024
Datacamp

- Learned the fundamentals of **dimensionality reduction**, distinguishing **feature selection** from **feature extraction**, and applied high-dimensional data visualization techniques such as **t-SNE** to explore complex datasets.
- Practiced detecting and removing low-value or redundant features (low variance, high missingness, strong correlation) and used **Principal Component Analysis (PCA)** for data exploration, preprocessing in modeling pipelines, and an image-compression use case.
- Skills: Python, Dimensionality Reduction, Principal Component Analysis (PCA), t-SNE, Feature Selection, Feature Engineering, scikit-learn, Machine Learning

Cleaning Data in Python – Course — Aug 2024 – Sep 2024
Datacamp

- Learned to identify, diagnose, and treat common **data quality** issues, including incorrect data types, out-of-range values, and duplicate records, along with fixing inconsistent text and categorical data using **pandas** and **NumPy**.
- Practiced strategies for handling **missing data** (deletion, imputation), applying **unit conversions** and cross-field validation with assert statements, and performing **record linkage** to merge datasets with fuzzy/typo-prone matches into a single clean master dataset.
- Skills: Python, Data Cleaning, pandas, NumPy, Data Validation, Missing Data Imputation, Record Linkage, Data Quality Assurance

Exploratory Data Analysis in Python – Course — Aug 2024 – Sep 2024
Datacamp

- Learned a structured approach to **Exploratory Data Analysis (EDA)**, including validating and summarizing categorical and numerical data, handling missing values/outliers, and building insightful **Seaborn** visualizations on real-world datasets (e.g., unemployment and airfare data).
- Learned to examine relationships across numerical, categorical, and **DateTime** variables using correlation analysis, and to translate EDA findings into next steps such as **feature engineering**, balancing categorical features, and generating hypotheses for downstream data science workflows.
- Skills: Python, Exploratory Data Analysis (EDA), pandas, Seaborn, Data Visualization, Correlation Analysis, Feature Engineering, Outlier Detection

Introduction to Statistics in Python – Course — Jul 2024 – Aug 2024
Datacamp

- Learned core **descriptive statistics** (mean, median, standard deviation) and **probability** concepts, including discrete and continuous probability distributions and the **Normal Distribution**/**Central Limit Theorem**, applied to real-world business questions.
- Learned to quantify relationships between variables using **correlation**, understand how confounding variables and **experimental/study design** (longitudinal vs. cross-sectional) affect result reliability, using Python libraries such as **NumPy**, **pandas**, **SciPy**, and **Matplotlib**.
- Skills: Python, Statistics, Probability, Descriptive Statistics, Correlation Analysis, Hypothesis-Ready Experimental Design, NumPy, SciPy

Advanced Deep Learning with Keras – Course May 2024 – Jun 2024
Datacamp

- Learned to build complex neural network architectures using the **Keras Functional API**, including **multi-input models** with categorical embeddings, shared layers, and merge layers, extending designs from two inputs to three or more.
- Learned to design **multi-output networks** capable of solving multiple regression targets simultaneously or combining regression and classification tasks in a single model, and to evaluate model performance on new data using multiple metrics.
- Skills: Python, Keras, Deep Learning, Neural Network Architecture Design, Keras Functional API, Multi-Input/Multi-Output Models, TensorFlow

Introduction to Deep Learning with Keras – Course Apr 2024 – May 2024
Datacamp

- Learned **neural network** fundamentals with **Keras**, building and training models for regression (predicting asteroid trajectories), binary classification (real vs. fake bills), and multiclass classification tasks.
- Learned to interpret **learning curves**, tune **activation functions**, batch size, and **batch normalization**, perform automatic **hyperparameter optimization** with scikit-learn, and build advanced architectures including **autoencoders**, **Convolutional Neural Networks (CNNs)**, pre-trained models, and **Recurrent Neural Networks (RNNs)** for text prediction.
- Skills: Python, Keras, Deep Learning, Neural Networks, Convolutional Neural Networks (CNN), Recurrent Neural Networks (RNN), Hyperparameter Tuning, Autoencoders

ACHIEVEMENTS, SKILLS, AND INTERESTS

- **Achievements:**
  - **Best Academic Student Award**, Cendana Senior High School (2022).
  - **Bronze Medalist**, Informatics of PCI National Olympiad Contest 2021.
- **Full-Stack Web Development:** .NET Framework, FastAPI, Node.js, React.js, Vue.js, Three.js, Tailwind CSS.
- **Database Management System:** SQL Server, PostgreSQL, MySQL, Neo4j, ChromaDB, Milvus, MongoDB.
- **AI System:** LangChain Framework, RAG, Knowledge Management, LLMs, Prompt Engineering.
- **Tools & Methodology:** Git, Figma, Postman, Agile Methodology.
- **Office & Documentation:** Microsoft Office Suite (Word, Excel, PowerPoint), Google Workspace, LaTeX.
- **Language Proficiency:**
  - **Bahasa Indonesia** – Native
  - **English** – B2 Upper Intermediate
- **Interests:** Full-Stack Development, Software Engineering, Motion & Interaction, Natural Language Processing, Large Language Models, Agentic AI.