LATHIFAH SAHDA

Surabaya, East Java | lathifahsahda03@gmail.com
Portfolio: lathifash03.github.io
linkedin.com/in/lathifah-sahda | github.com/lathifash03

Informatics graduate with research experience in NLP, LLM evaluation, and data-driven systems. Built a constrained-LLM pipeline for procedural news generation as an undergraduate thesis, screening 134,359 articles and evaluating 1,440 model outputs, and an agentic verification layer over a Neo4j knowledge graph during a research internship at NTUST, Taiwan. Hands-on with Python, SQL, Tableau, and machine learning for data analysis and dashboards. Teaching assistant for Deep Learning and Database Systems.

Education

Institut Teknologi Sepuluh Nopember (ITS) Surabaya, Indonesia
Bachelor of Informatics Engineering, GPA 3.70/4.00, Indonesian Education Scholarship *Jul. 2022 – Aug. 2026*

- Thesis on a hybrid pipeline that converts news narratives into procedural text, combining rule-based NER and temporal constraints, a constrained LLM, and rule-based post-processing. Screened 134,359 articles into a 1,760-article dataset across 16 domains. Compared Llama 3.3 70B, GPT, and Claude on 480 held-out articles per model (1,440 evaluations), reaching BERTScore F1 of 0.645 to 0.700 and a format pass rate of 99.6 to 99.8%. Post-processing raised entity preservation by 31.7 to 38.1 percentage points.
- **Relevant coursework:** Machine Learning, Deep Learning, Text Mining, Data Mining, Multivariate Data Analysis, Probability & Statistics, Artificial Intelligence Concepts, Knowledge-Based Systems, Database Systems.

Technical Skills

AI & NLP: LLMs, RAG / GraphRAG, AI agents (LangGraph, MCP), prompt engineering, LLM evaluation, topic modeling, PyTorch, Transformers, spaCy
Data & ML: Python, SQL, Neo4j/Cypher, data analysis, data visualization, scikit-learn, XGBoost, LightGBM, Tableau, Excel, Streamlit
Software: Flask, REST APIs, Docker, Git, Next.js, Flutter, Laravel

Work Experience

Research Intern, TEEP Program Jun. 2026 – Aug. 2026
Center for IoT Innovation, National Taiwan University of Science and Technology (NTUST) *Taipei, Taiwan*

- Built Module 3 of a five-module international team project: a verify-then-retry agent over a Neo4j knowledge graph (355 nodes, 805 relations). Before answering, it applies three gates: faithfulness (LLM-as-judge), trust (confidence, source weight, and recency), and temporal validity.
- Connected the agent to GraphRAG retrieval through MCP and LangGraph using local models (Hermes3 3B, qwen3-embedding 0.6B), and packaged the API with Docker.
- Evaluated on a 20-item ground-truth benchmark (median of 3 runs, frozen snapshot): 75% end-to-end accuracy (15/20) and 0% false-pass. Low-trust cases were the weakest (1/5). Disabling the trust gate raised false-pass to 57%. LLM-judge reliability reached Cohen's kappa 0.833.

Research Assistant & Laboratory Administrator Jun. 2024 – Jun. 2026
Information Intelligent Management (MCI) Laboratory, ITS *Surabaya, Indonesia*

- Worked on Hybrid RAG with ReAct prompting for LLMs in education, and on dynamic topic modeling and multi-label deep-learning classification of Indonesian news.
- Co-led Kinderfin, a web-based financial management system for a kindergarten (community service). Gathered requirements by survey and interview and presented the product to the school.

Teaching Assistant 2023 – 2026
Informatics Engineering Department, ITS *Surabaya, Indonesia*

- Assisted six courses, from Deep Learning to Database Systems and Automata Theory. Guided 300+ students in lab sessions and reviewed their work.

IT Intern, Mobile Application Developer Oct. 2025 – Jan. 2026
UBS Gold *Surabaya, Indonesia*

- In a team of two, built Secure Verification App, a Flutter proof of concept (Android/iOS) for approving internal HR, finance, and QMS requests, with device binding, face recognition via the company's internal API, and a WireGuard VPN.

Web Developer Intern Mar. 2025 – Jun. 2025
Directorate of Business Cooperation and Management (DKPU), ITS *Surabaya, Indonesia*

- Restructured the DKPU ITS website (WordPress), reorganizing navigation and adding bilingual (ID/EN) support.

Projects & Achievements

- **Ruang Topik**, 2026. Text Mining final project. Scraped 20,334 articles from six national news portals and compared LDA, NMF, and BERTopic. NMF scored the highest topic coherence (C_v 0.825, k=25) against BERTopic 0.778 and LDA 0.616. Embedding choice moved coherence more than Optuna tuning (0.075 spread vs +0.021). Deployed as a Streamlit dashboard.
- **Fraud Detection**, course project. Compared logistic regression and a decision tree with SMOTE and class weights on a synthetic transaction dataset. The decision tree reached PR-AUC 0.86 and F1 0.77 on 22 fraud cases in the test set.
- **Sales Dashboards (Tableau)**, 2024. Analyzed monthly sales and order value by US state for the MCI laboratory recruitment task.
- **Major.in**. Web app that recommends study majors, with an XGBoost model served through a Flask REST API and a Next.js front-end.
- **PKM-K National Funding Recipient**, 2024. WeapMath, a multiplayer educational math game, registered for copyright (HKI).

Leadership & Organizational Experience

General Secretary of External Affairs Feb. 2025 – Feb. 2026
HMTC ITS (Informatics Student Association), Suar Peradaban cabinet *Surabaya, Indonesia*

- Part of the leadership of a 120-member student association that delivered 20+ work programs in one term.
- Managed partnerships with companies, universities, and government agencies. Previously General Secretary of Administration II (2024).

Head of Public Relations Division (committee member since 2023) 2024
Schematics ITS (national IT event by HMTC) *Surabaya, Indonesia*

- Led the PR team and built collaboration with 20+ media partners. The event reached 2,000+ participants.

Reporter & Editor Nov. 2022 – Jun. 2026
ITS News & Magazine (ITS Online), Public Communication Unit (UKP ITS) *Surabaya, Indonesia*

- Promoted from reporter to editor. Wrote and edited 150+ articles and magazine pieces on technical topics for a general audience (portfolio on Linktree).

Other Roles & Public Speaking

- **Master of Ceremony**, IDSECCONF 2024 (Indonesia's annual IT security conference).
- **Tim Kawal Gemastik ITS**, 2025. Supported ITS teams in the national ICT competition (Gemastik).

Training & Certifications

- **TOEFL ITP**, score 520 (Listening 55, Structure 48, Reading 53), Colorado Course Bengkulu, Aug. 20, 2026
- Formulas and Functions in Microsoft Excel, AmanExcel, online class (2 hours, certificate of participation), Oct. 31, 2026
- AI Fluency: Framework and Foundations, Claude Academy (Anthropic), course completion badge, Nov. 1, 2026
- LKMM Tingkat Menengah (Intermediate Student Management & Leadership Training), ITS, 2024