Thirza Ahmad Tsaqif

Jakarta, Indonesia | (+62)81290765711 | thirzahmad@gmail.com | [Linkedin](#) | [Github](#) | [Website](#)

Driven and self-motivated Information Systems student at the University of Indonesia with a passion for programming and design. A creative thinker with a strong work ethic, eager to tackle challenges and continuously enhance technical skills in innovative environments.

EDUCATIONAL BACKGROUND

Information System | Bachelor of Computer Science | Universitas Indonesia, Depok, Indonesia
September 2022 - Present

SMAN 109 Jakarta | Jakarta, Indonesia
July 2019 - July 2022

EXPERIENCES

Software Engineer, Internship | OPPO Manufacturing Indonesia

June 2025 - Present

- Developed a **AI Agent** about company utilizing **RAG and LLM** for the information and **STT and TTS** for the input and output, and **Face Recognition** for employee authentication, deployed and optimized to run on **local GPU** infrastructure.
- Designed and implemented a **computer vision**-based **image classification** system to classify workplace conditions according to **5S** (Sort, Set in order, Shine, Standardize, Sustain) methodology.
- Developed an **AI-driven Root Cause Analysis tool** using **RAG and LLM**s to automate the "5 Whys" technique based on historical problem reports, streamlining issue resolution and knowledge reuse. fully self-hosted with local GPU resources to ensure data security and performance.

Backend Developer, Internship | Aether AI

March 2025 - July 2025

- Developed and deployed a backend and intelligent chatbot system for PFN using **FastAPI** and **Vectorshift**, integrating **OpenAI**'s language models with the Retrieval-Augmented Generation **(RAG)** method to provide accurate film-related information.
- Built and implemented a backend and AI-powered chatbot for KJRI New York using **FastAPI** and **Vectorshift**, leveraging OpenAI and the RAG approach to deliver real-time, context-aware consular information.

Software Engineer, Volunteer | Replenish Nutraceutics

February 2025 - May 2025

- Developed an **AI-powered** Dosage Recommendation System, creating a new system for the organization, enabling **data-driven** dosage recommendations using **OpenAI** and **FAISS**.
- Built a secure API with **FastAPI**, incorporating **JWT authentication** for access control.
- Integrated a **Django-based frontend** with **FastAPI backend** services to ensure seamless system functionality.

Backend Developer, Internship | Avatar Digital

April 2025 - May 2025

- Developed and maintained a shipment and admin backend system using **Golang** with the **Labstack Echo** framework, and **MariaDB/MySQL** as the database.
- Utilized **Docker** for containerization and **GitHub Actions** for CI/CD automation

Teaching Assistant of Data Structures and Algorithms | Faculty of Computer Science, Universitas Indonesia

September 2024 -December 2024

- Created lab assignments related to **Linked Lists**, ensuring minimal revisions during student execution.
- Designed programming tasks related to **Graphs**, achieving minimal revisions during student work.
- Provided assistance to students before midterms (UTS) and final exams (UAS).
- Conducted **programming task demonstrations**, providing feedback on peer students' code and engaging in Q&A sessions to clarify assignment details.

Developer Staff, Multimedia Department | BEM Universitas Indonesia

March 2024 - December 2024

BEM Universitas is an University organization to accommodate student interests.

- Development and Responsible for the BEM UI **Integrated Information Systems (SIT) website**, leveraging **Django Python** for a robust backend and crafting a responsive frontend with **HTML and CSS**.
- Developed and maintained the BEM UI **Integrated Information Systems (SIT)** website, utilizing **Firebase for authentication and database** management.
- Deployed the SIT system on **Railway and Firebase**, ensuring high availability and scalability.
- Developed a **LINE Messaging API (LINE bot)** for mail and publication, enabling staff to access features directly from the LINE app, improving communication and accessibility.

Backend Staff | BEM Faculty of Computer Science UI

March 2023 - December 2023

BEM Fasilkom is an Organization inside the Faculty to accommodate student interests.

- Maintained and updated the backend of the BEM Fasilkom UI website to ensure code stability and reliability, supporting all BEM Faculty staff and students.
- Built and implemented new models based on the redesigned website, improving user experience and functionality, utilizing **Django Python and Go.**
- Developed APIs according to established **API contracts**, ensuring seamless integration with other systems with tested and developed with Postman.
- Adhered to **GitHub and organizational coding standards,** ensuring clean, maintainable code with **Sonarcube**..
- Developed and maintained critical modules like LPJ Online, Best Staff, Scholarship, and Recruitment websites, enhancing organizational efficiency and student engagement.

Mentor & Visual Design Staff | DDP - 0

June 2023 - July 2023

DDP-0 is an mentoring event to introduce code and faculty to new students.

- Facilitated a **mentoring** program aimed at introducing first-year students to coding and faculty resources.
- Provided foundational **Python programming** instruction to new students, enhancing their initial learning experience.
- Developed comprehensive and visually engaging presentation materials used for learning sessions using **Figma.**

- Created dynamic and informative feed designs to promote event schedules, updates, and key information using **Figma.**

Visual Design Staff | PERAK

March 2023 - September 2023

PERAK is a sports event within the faculty to support sports interest in students.

- Designed visually appealing posters to promote sports competitions with **Figma**.
- Adapted designs for various formats including Instagram feed, row format, traditional posters, Line, and Facebook posts.
- Maintained open communication with the team to ensure alignment with event goals and branding guidelines.

PROJECTS

Integrated Information Systems (SIT) | BEM UI

- Developed and maintained a **comprehensive website** that managed BEM UI's affairs, social media publications, financial processes (reimbursement and income/expenditure), and partnership/sponsorship documentation thus improving operational efficiency.
- Implemented the system using the **Django Framework** with **Firebase**, streamlining functionality and authentication processes for enhancement in user access speed and security.
- Deployed the project project on Railway.
- Developed and maintained a **LINE Messaging API** to facilitate organizational mail and publication tasks, reducing communication delays and enabling direct access to features, benefiting over **200** active users.

Ollie Chatbot | Oppo Manufacturing Indonesia

- **Developed an HR and employee information chatbot** for Oppo Manufacturing Indonesia, integrating **FaceNet-based facial recognition** for secure authentication.

- Implemented **text-to-speech** with a custom-trained with **Transformers** Indonesian **xTTS** model and **speech-to-text** using a local deployment of **OpenAI Whisper**.
- Utilized **RAG** with **Faiss** and **PostgreSQL** for efficient information storage and retrieval, ensuring quick and accurate responses.
- Integrated **OpenAI GPT** and **Ollama** for natural language generation, delivering context-aware and human-like answers.

5S AI Camera | Oppo Manufacturing Indonesia

- **Developed and trained a computer vision model** using **ConvNeXt** with PyTorch and Transformer architecture to classify workplace images for 5S compliance.
- Integrated **Ollama Gemma Vision** to generate and describe detected violations, **LLaVA Vision Language Model** to identify target objects, and **OwlViT** for object detection.
- Built a **React + TypeScript + Tailwind** frontend to display live camera feeds, violation details, and itemized lists of detected issues.

5Why AI Application | Oppo Manufacturing Indonesia

- **Developed an AI-powered Root Cause Analysis tool** leveraging **Dense and Sparse RAG** with **Faiss** and **MiniLM**, integrated with **Deepseek LLMs** to automate the "5 Whys" method from historical problem reports.
- **Streamlined issue resolution and improved knowledge reuse** by providing automated, context-aware root cause identification.
- Built the **frontend** using **React**, **TypeScript**, **Tailwind CSS**, and **shadcn/ui** for a modern, responsive user interface.

- Implemented the **backend** with **FastAPI** and utilizing **PostgreSQL** as the database, ensuring secure, scalable, and low-latency API performance.

KJRI New York Chatbot (Maleo AI) | Aether AI

- Built an **AI-powered** chatbot for consulate-related inquiries, reducing manual inquiry handling and serving as the front-line resource for FAQ responses. Integrated **GPT** with **Retrieval-Augmented Generation** (RAG) and **Vectorshift** for context-aware document retrieval.
- Developed and deployed the backend using **FastAPI**, ensuring secure, scalable, and low-latency response handling.

PFN Chatbot | Aether AI

- **Developed an AI chatbot** that delivers information about films produced by PFN by crawling the PFN website and indexing official documents.
- **Integrated Vectorshift, GPT, and RAG** to enable context-aware retrieval of film metadata and FAQs, improving the relevance of answers for user queries.
- **Built and deployed the backend with FastAPI (Python),** ensuring secure, scalable, and low-latency API endpoints for real-time chat interactions.

JNE Self Kiosk Backend | Avatar Digital

- **Developed a self-service parcel delivery backend application** for JNE using **Go** and the **Labstack Echo** framework.
- **Implemented CI/CD pipelines** with **GitHub Actions**, automating build, test, and deployment processes to improve development efficiency and reliability.

Open Recruitment Website API | BEM Fasilkom UI

- Developed a recruitment website for selecting the next term's BEM Fasilkom UI members.
- Built using **Go** with the **Gin framework** and **PostgreSQL.**
- Adhere to **API Documentation** and contract to increasing integration with Frontend

RAGReader | NextAI Hackathon Submission | [[Github Backend]](Github Backend) [[Github Frontend]](Github Frontend) [[Devpost]](Devpost)

- Developed a **RAG-based** website that retrieves content from a provided URL or file and generates responses based on user prompts.
- Built the backend using **Django REST Framework** and the frontend with **Vite, React, TypeScript,** and **Tailwind CSS**
- Implemented **LangChain** as the **RAG pipeline** for efficient retrieval-augmented generation.
- Integrated multiple generative AI models, including **OpenAI, Claude,** and **Mistral**, to enhance response quality.

Dosage Recommender | Replenish Nutraceutics

- Developed a dosage recommender system based on dosage data with **OpenAI GPT**
- Developed with **FastAPI** utilizing **JWT Authentication**
- Integrating the dosage data from **Airtable** to the **FastAPI**
- Integrating the API with **Django** based frontend

API LPJ Online | BEM Fasilkom UI

- Developed a robust **website API** to manage programs and reports for BEM Fasilkom UI, reducing manual processing time and increasing data accessibility for over 200 users.
- Utilized **Django REST Framework** and **PostgreSQL**, enhancing data handling efficiency and scalability, and achieving a query response time improvement
- Ensured strict adherence to the API Contract, resulting in a seamless integration with existing systems and a 100% compatibility rate to Frontend application.

- Implemented **SonarQube** for continuous code quality monitoring.

ChattyDesk | Dev Challenge Submission [[Github Backend](#)] [[Github Frontend](#)] [Devpost]

- Developed a cross-platform desktop application enabling seamless multi-LLM chat that is **Gemini, Claude, Open AI GPT**, and **Mistral.**
- Backend involved designing and deploying a scalable API using **Django REST Framework**, **Python**, and **PostgreSQL**, hosted on **DigitalOcean**.
- Desktop application was built with **Electron**, **React**, and **TypeScript**, ensuring a smooth user experience across different **LLM models.**

Best Staff Voting Website API | BEM Fasilkom UI

- Designed a website for staff voting to recognize the Best Staff among BEM Fasilkom UI members.
- Developed using **Django REST Framework** for robust API functionality.
- Ensured adherence to comprehensive API Documentation and contract standards, resulting in streamlined integration with the frontend.

SiInven | Propensi Courses

- **Developed and upgraded** LIA's inventory management system following full **SDLC** practices—from requirements gathering through interviews, to planning (PRD creation and Agile sprints), development, implementation, and user training.
- Built the **backend** using **Java Spring Boot** and **PostgreSQL**, containerized with **Docker** for consistent deployment and easier maintenance.
- Created the **frontend** with **React**, **TypeScript**, and **Tailwind CSS** for a responsive and user-friendly interface.

ETL University Project | Advanced Database Courses

- **Designed and implemented an ETL pipeline** from data generation to database integration, including star schema planning for efficient analytics.
- Built a data workflow from source → staging → data warehouse using **Apache Airflow** and **MinIO** for orchestration and storage.
- Developed the pipeline in **Python**, with **Apache Superset** as the analytics and visualization frontend.
- **Containerized** the entire pipeline with **Docker** for portability and consistent deployment.

APAP MEDIKA | APAP Courses

- Developed a website for Medical Workflow, including appointment scheduling, prescription management, and other features.
- Built the API using Spring Boot and set up a **CI/CD** pipeline in **GitLab** with **Docker** for deployment on Ubuntu.
- Developed the frontend using **Vue** with **TypeScript** and **Tailwind CSS**.

Knowlxcircle Application | Gemini API Developer Competition Submission [Github Backend] [Github Frontend]

- Designed and developed Knowlxcircle, a versatile crowdsourced learning platform, enhancing collaborative learning circles
- Integrating **Google Generative AI** with the Application as a Automatic Article Creator and Chatbot
- Implemented the backend API using **Django REST Framework** and **PostgreSQL**.
- Built a modern web interface using **TypeScript** and **Tailwind CSS.**
- Deployed the backend on **Azure Cloud Services** and the frontend on **Verce**l, Improvement in application scalability and load time, ensuring a swift and reliable user experience.

Gemini Japanese | MLH GWH Submission [Github Backend] [Github Frontend] [Devpost]

- Developed a Japanese translation application that provides users with both romaji and translations by integrating the **Gemini AI API**, increasing translation accuracy with any japanese format.
- Utilized **React** with **TypeScript** for the frontend to create a dynamic and intuitive user interface,
- Implemented the backend using a **TypeScrip**t server, ensuring efficient data processing. Utilizing **AWS Amplify** as a deployment platform.

LiteralStoryboard | AWS Game Builder Hackathon Submission [Github Backend] [Github Frontend] [Devpost]

- Created a game website that combines board game and story.
- Developed using **Vite React Typescript** and **Tailwind CSS** and utilizing **Gemini API** as the story generator and
- Utilized **AWS Amplify** as deployment platform.

Recipe Recommender | RAG 'n' ROLL Amp up Search with Snowflake & Mistral Submission [Github Backend] [Github Frontend] [Devpost]

- Created a website that will recommend 5 food recipes based on user time.
- Using Cookpad as data source with **Scrapping** and utilizing **Streamlit** as front-end.
- Utilizing **RAG** and **Snowflake Cortex Search** and Using **Mistral AI** as the AI backbone for the website.

Recommendica | Global Hack Week AI/ML Submission | [Github Backend] [Github Frontend] [Devpost]

- Developed a Research Recommendation **RAG-based API** using the ArXiv dataset, with **FAISS** for retrieval and **OpenAI** for AI processing and Langchain as the pipeline.
- Utilized **OpenAPI** for documentation and Built the API with **Django REST Framework.**

Ecofriendly Recipe Recommender | Nova Hacks III Submission | [Github Backend] [Github Frontend] [Devpost]

- Developed an eco-friendly recipe recommender utilizing **RAG** with a **LangChain** pipeline, **FAISS**, and OpenAI.
- Built the frontend with **Vite, React, TypeScript**, and **Tailwind CSS.**
- Developed the backend using **Django REST Framework**.

Endorbit | Build Your Own AI Chat Bot Submission [Github] [Devpost]

- Developed an **e-commerce chatbot** that recommends products based on user prompts.
- Utilized the **Flipkart products dataset** with **LangChain, FAISS, and OpenAI** for recommendations.
- Built the backend with **Django REST Framework** and the frontend using **Vite, React, TypeScript, and Tailwind CSS**.

Wikipedia-based Hybrid RAG | GraphRAG & NVIDIA cuGraph Submission | [Github Backend] [Github Frontend] [Devpost]

- Developed an idea for integrating **GraphRAG** with **VectorRAG** using **LangChain, FAISS, NetworkX, cuGraph**, and **ArangoDB**, leveraging Wikipedia navigation path data.
- Implemented the concept in a **Colab notebook.**

ACHIEVEMENT & AWARDS

Mockathon 3.0 Hackathon Winner 1st
What in the world Android Application
- Developed an Android application using Java and XML.
- Integrated a Countries API to provide information about any country.
- Achieved 1st place among 50 participants.

TECHNICAL SKILLS

Python :

- Earned multiple certificates including FreeCodeCamp's Python, Scientific Computing with Python, Data Analysis, Machine Learning and College Algebra with Python. Additionally, obtained Python Essential 1 and 2 certifications from Cisco Skills for All. Achieved Gold level on HackerRank.
- Developed backend systems for BEM Fasilkom UI using Django. Using Django Python for develop BEM UI Integrated Information Systems (SIT).
- Demonstrated backend development expertise by implementing Django in personal projects like JobList, HowtoInstallCode, and Knowlxcircle, delivering robust and scalable solutions.

Go :

- Leveraged Go with PostgreSQL to create a robust recruitment website for BEM Fasilkom UI, demonstrating efficiency and scalability.

SQL :

- Utilized PostgreSQL for BEM Fasilkom UI's website and excelled in the final project of the Database course.
- Solved 50 SQL challenges on LeetCode, highlighting problem-solving skills and SQL expertise.

Javascript :

- Earned the Full Stack Open Certificate, utilizing MongoDB and Express for backend development and React Javascript and tailwind for frontend development demonstrating full-stack proficiency.
- Completed JavaScript Essential 1 and 2 courses from Cisco Skills for All, solidifying foundational and advanced JavaScript skills.
- Achieved FreeCodeCamp's Backend and API certificate by using Express and MongoDB , showcasing expertise in building APIs and server-side applications.
- Achieved FreeCodeCamp certificates in JavaScript Algorithms and Data Structures, Front End Development Libraries using React.js, and Data Visualization using D3.

Firebase :

- Implemented Firebase authentication and database solutions for BEM UI Integrated Information Systems, enhancing user management and data security.

MongoDB :

- Demonstrated proficiency in NoSQL databases by implementing MongoDB (Mongoose) for projects from both the Full Stack Open and FreeCodeCamp courses.

CI/CD :

- Mastered continuous integration and continuous deployment practices using GitHub Actions for university courses and the Full Stack Open course.
- Deployed APIs and websites on platforms like Railway, Domcloud, Microsoft Azure, and Cloudflare, ensuring reliable and scalable deployment solutions.

Typescript :

- Earned the Full Stack Open Typescript Certificate, utilizing MongoDB and Express for backend development and React Typescript and tailwind demonstrating full-stack proficiency.

Flutter :

- Acquiring Flutter framework and Dart knowledge through university courses and self-study using the Flutter Apprentice (2nd edition), Flutter for Dummies, and Flutter Projects books.
- Developed various Flutter projects, including a Movie API application, a Result Summary component design from Frontend Mentor, and a book library application featuring authentication and API consumption, showcasing a strong understanding of cross-platform mobile app development.

Japanese Language:

- **Japanese Language Proficiency:** N5 Certificate.
- Completed **two-semester course** (UI Central Japanese Studies × AsiaToJapan) covering **N4 and N5** material with native Japanese instructors, using *Irodori* textbooks and interactive workshops.

SOFT SKILLS

- Time Management : ability to use time wisely and efficiently.
- Collaboration : ability to work effectively in a group.
- Ability to work independently.