

Thariq Ivan Anendar

+62 823-3101-8129 | thariq.ivan@gmail.com | Surabaya, Indonesia | linkedin.com/in/thariqivan | github.com/vannndar

SUMMARY

AI/ML-focused Information Engineer undergraduate at Institut Teknologi Sepuluh Nopember with experience in computer vision, LLM/RAG systems, time-series forecasting, UAV systems, and full-stack web development. Skilled in Python, TypeScript, C/C++, Java, SQL, PyTorch, TensorFlow/Keras, OpenCV, LangChain, ChromaDB, AWS, Supabase, and Vercel, with internship experience optimizing industrial time-series calculation pipelines from over 1 hour to approximately 28 seconds.

TECHNICAL SKILLS

Programming Languages: Python, TypeScript, C/C++, Java, SQL

AI/ML Deep Learning: PyTorch, TensorFlow/Keras, Scikit-learn, Transformers, QLoRA, CNN, LSTM, ResNet, ConvNeXt, InsightFace

LLM, NLP RAG: LangChain, ChromaDB, SentenceTransformers, Semantic Search, Cross-Encoder Reranking, Prompt Engineering, ROUGE, Semantic F1-Score

Computer Vision: OpenCV, YOLO, Camera Calibration, Object Detection, Face Recognition, Deepfake Detection, Attention Map Visualization

Data Analytics: Time-Series Forecasting, Zero-Shot Prediction, Large Time-Series Models, Predictive Maintenance, Anomaly Detection, Power BI

Web Development: Next.js, React, Tailwind CSS, Dash, Streamlit, Supabase, FullCalendar, Tiptap, Recharts

Database Storage: MySQL, PostgreSQL, Chroma Vector Database, Supabase, AWS-based Image Storage

Cloud, Deployment Tools: AWS, Vercel, Streamlit, Google Drive Model Hosting, Git, GitHub, Kaggle Notebook

Robotics, UAV Embedded Systems: ROS, PX4, ODM, Raspberry Pi 5, Arduino, ESP32, Microcontrollers, Flight Controller, Telemetry, Mission Planning

EXPERIENCE

PT PLN Nusantara Power

2025

Data Analyst and AI Engineer Intern

Indonesia

- Processed and analyzed 5 years of power plant time-series data using Inductive Automation Ignition to support forecasting, predictive maintenance, and anomaly detection use cases.
- Explored OpenLTM and Large Time-Series Model approaches for zero-shot prediction on industrial power plant data.
- Improved calculation pipeline performance through vectorization, loop refactoring, feature selection, and parallel processing.
- Optimized calculation pipeline runtime from over 1 hour to approximately 28 seconds per pipeline.

Bayucaraka ITS

2023 – 2025

Programming Elektronik / Technology Development Airframe

Surabaya, Indonesia

- Configured and developed UAV systems using PX4, including flight controller setup, telemetry integration, mission planning, and coding tasks.
- Analyzed UAV flight data to evaluate system performance and support technical improvements during development and testing.
- Implemented YOLO-based fire detection concepts for UAV-related computer vision applications.
- Integrated cloud computing and embedded system components using AWS, Arduino, ESP32, and microcontrollers.

Schematics NPC – ITS

2023

Problem Setter

Surabaya, Indonesia

- Authored one graph-based competitive programming problem, "Treasurer," involving weighted graph traversal, movement constraints, and maximum treasure optimization.
- Designed the problem statement, input-output format, constraints, sample case, and explanation for contest participants.
- Validated 2–3 additional competitive programming problems by reviewing logic, test cases, constraints, and expected outputs.

PROJECTS

LawBot – Legal Chatbot with Fine-Tuned LLM and RAG

2025

LLM/RAG, NLP, Legal Tech

PyTorch, Transformers, QLoRA, LangChain, ChromaDB, Streamlit

- Developed an end-to-end legal chatbot for Indonesian TNI law revision information using fine-tuned LLMs and Retrieval-Augmented Generation.
- Built a legal document processing pipeline including text cleaning, chunking, tokenization, embedding generation, and vector storage in ChromaDB.
- Implemented hybrid retrieval using BM25, semantic search, cosine similarity, and cross-encoder reranking to improve document relevance.
- Fine-tuned multiple pretrained LLMs using QLoRA and evaluated performance using ROUGE-1, Semantic F1-Score, factual accuracy, answer completeness, and hallucination rate.
- Built a Streamlit prototype that provides document-grounded answers with supporting references from the knowledge base.

Identifikasi Walet – CCTV-Based Bird Individual Identification

2025 – 2026

AI/ML Computer Vision Project

YOLO, ResNet, InsightFace

- Built an end-to-end computer vision pipeline to extract CCTV frames, label bird images with bounding boxes, train models, run inference, and monitor model performance.
- Experimented with CNN, YOLO, ResNet, and InsightFace-based embedding models to improve individual bird separation in visually similar CCTV images.
- Developed an inference web application to inspect embedding quality and evaluate model prediction performance.
- Achieved test accuracy of 0.9933, test EER of 0.00256, ROC AUC of 0.99997, PR AUC of 0.99991, and best test F1-score of 0.99562.

Generative-AI-Saham – Stock Price Forecasting with News Sentiment Analysis

2024

AI/ML Web App Project

LSTM, TensorFlow/Keras, Dash, yfinance

- Developed an end-to-end stock forecasting web application that combines 5 years of historical stock price data with news sentiment signals.
- Built an automated data pipeline using yfinance, Detik.com news scraping, sentiment mapping, MinMaxScaler normalization, and 60-timestep sequence windowing.
- Trained a Sequential LSTM model with sentiment feature concatenation and evaluated 5 input scenarios using RMSE, MAE, and R^2 Score.
- Created an interactive Dash and Plotly dashboard for experiment selection, stock visualization, and model performance evaluation.
- Achieved BBNi forecasting performance of RMSE 61.74 and R^2 Score 0.9733 using Siebert news sentiment.

Bayusuta – Autonomous UAV Forest Fire Detection and Mapping System

2025

TEKNOFEST Project

UAV, ODM, Raspberry Pi 5, AWS, LTE/Satellite

- Developed an autonomous UAV system concept for real-time forest fire detection and mapping in TEKNOFEST 2025.
- Integrated ODM-based aerial mapping workflow with AWS-based image storage and fire detection inference for detection results management.
- Built an onboard image storage system using Raspberry Pi 5 to mitigate limited connectivity during field operations.
- Conducted LTE and satellite data transmission experiments to improve UAV operational capability in low-connectivity environments.

Walet Length Calculation

2026

Computer Vision Measurement App

Python, OpenCV, ChArUco, ArUco, Vercel

- Developed a computer vision measurement system to estimate object length from images using camera calibration and automatic pixel calculation.
- Implemented checkerboard and ChArUco-based camera calibration to reduce distortion-related measurement errors.
- Built automatic ArUco detection and pixel-to-length calculation workflow for image-based object measurement.
- Improved measurement error from approximately 0.5–1 cm to around 0.01–0.05 cm and deployed the application on Vercel.

Multi-Attentional Deepfake Detection

2025

AI/ML Computer Vision Web App

Python, PyTorch, timm, Streamlit, ConvNeXt

- Developed a binary deepfake detection system to classify face images as real or fake using a Multi-Attention architecture with ConvNeXt backbone.
- Implemented local attention pooling, global feature extraction, texture enhancement, and ensemble classification for face image analysis.

- Built a Streamlit inference demo with image upload, checkpoint loading from Google Drive, preprocessing, prediction output, and attention map visualization.
- Achieved evaluation accuracy of 85.66%, FAKE class F1-score of 0.9228, and weighted F1-score of approximately 0.7905 on the reported evaluation set.

LearningWithUs – Study Planner and Notes Platform

2026

Full-Stack Web App

TypeScript, Next.js, React, Tailwind CSS, Supabase, PostgreSQL

- Developed a full-stack study planning platform for managing courses, modules, weekly schedules, notes, focus sessions, and learning analytics.
- Designed PostgreSQL database schema and application flows for courses, notes, events, focus sessions, dashboard analytics, and gamification features.
- Implemented productivity features including weekly planner, recurring schedule generation, rich notes editor, Pomodoro logging, XP, level, badge, and streak tracking.
- Prepared the notes data architecture for planned LLM/RAG chatbot integration using chunking, embedding, and retrieval-based question answering.

Transformer-Based Two-Way BISINDO Sign Language Translator

2023

Program Kreativitas Mahasiswa Project

Transformer, NLP, AI

- Developed an AI-based concept for two-way BISINDO sign language translation using Transformer and natural language processing approaches.
- Contributed to system planning and technical proposal development for translating between BISINDO and text-based communication.
- Selected for Liga Program Kreativitas Mahasiswa ITS and received Program Kreativitas Mahasiswa funding from Kemdikbudristek and Belmawa.

YOLO-Based Fire Detection for UAV System

2023 – 2025

Computer Vision Project

YOLO, OpenCV, UAV

- Implemented YOLO-based fire detection concepts for UAV-related computer vision applications.
- Integrated computer vision implementation with UAV development activities to support aerial monitoring use cases.
- Supported system evaluation through flight data analysis, telemetry observation, and UAV development testing.

AWARDS

- Funding Recipient and Team Member, Bayusuta, TEKNOFEST Turkey 2025 – Autonomous UAV system for real-time forest fire detection and mapping
- Funding Recipient, Program Kreativitas Mahasiswa, Kemdikbudristek and Belmawa, 2023 – Transformer-Based Two-Way BISINDO Sign Language Translator
- Selected Participant, Liga Program Kreativitas Mahasiswa, Institut Teknologi Sepuluh Nopember, 2023 – Transformer-Based Two-Way BISINDO Sign Language Translator
- 3rd Place, Kontes Robot Terbang Indonesia 2023 National Level, Technology Development Airframe Division, Puspresnas and BPTI
- 1st Place, Kontes Robot Terbang Indonesia 2024 Regional Level, Technology Development Division, Puspresnas and BPTI
- Best Method Award, Kontes Robot Terbang Indonesia 2024 National Level, Technology Development Division, Puspresnas and BPTI

EDUCATION

Institut Teknologi Sepuluh Nopember

Bachelor of Informatics Engineering

Surabaya, Indonesia

2022 – 2026

LICENSES & CERTIFICATIONS

- Microsoft Azure for AI and Machine Learning, Microsoft, Jun 2026. Credential ID: 1KLL40LG1J9M
- Foundations of AI and Machine Learning, Microsoft, Jun 2026. Credential ID: GEVTXJMC PF1X
- Databases and SQL for Data Science with Python, IBM, Feb 2026. Credential ID: WTIH3TJIT034
- Deep Learning: Neural Network & AI, Udemy, 2024
- Natural Language Processing: NLP With Transformers in Python, Udemy, 2023
- E-Talks Machine Learning, IEEE ITS, 2022
- LKMM-Pra TD, Institut Teknologi Sepuluh Nopember, 2023
- LKMW-TD, Institut Teknologi Sepuluh Nopember, 2022