

# Rivaldo Fauzan Robani

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AI/ML Engineer with experience designing, developing, and deploying production-ready AI applications powered by **Large Language Models (LLMs)**, **Retrieval-Augmented Generation (RAG)**, multimodal AI, and machine learning. Experienced in building scalable AI services, fine-tuning transformer models using **PEFT (LoRA and DoRA)**, and integrating NLP, computer vision, OCR, and speech technologies into production systems. Passionate about transforming cutting-edge AI research into reliable, scalable AI products through efficient inference, modern AI infrastructure, and backend engineering. **Recognized with a Kaggle Silver Medal (Top 1.6%) in the AI Mathematical Olympiad and a national research grant for applied LLM research.**

## Technical Skills

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### Programming & Frameworks

- **Programming Languages:** Python, JavaScript, SQL, PHP, C
- **Machine Learning:** PyTorch, TensorFlow, scikit-learn
- **Large Language Models:** LLMs, Retrieval-Augmented Generation (RAG), Prompt Engineering, PEFT, LoRA, DoRA, Embeddings, Semantic Search, Vector Databases, Conversational AI
- **Computer Vision & Speech:** OpenCV, MediaPipe, YOLO, Whisper, Google TTS, PaddleOCR
- **Web Development:** FastAPI, Flask, ExpressJS, ReactJS, Vue.js, Laravel, Spring Boot
- **Databases:** MySQL, PostgreSQL, MongoDB, Qdrant
- **DevOps & Cloud:** Docker, AWS (Lambda, S3, EC2), Git, REST API design
- **Data Science:** Time-Series Forecasting, Predictive Modeling, Feature Engineering, Clustering, Data Visualization

## Professional Experience

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### Epic Medical

Sept 2025 – Present

AI/ML Developer

- **Designed and deployed** production-ready AI applications powered by **Large Language Models (LLMs)**, **embeddings**, and **Generative AI** for healthcare applications.
- Engineered **machine learning pipelines** for **OCR**, **image classification**, and **object detection** using **PyTorch**, **OpenCV**, and **PaddleOCR**.
- Engineered multimodal AI pipelines integrating OCR, speech recognition, image understanding, text summarization, and avatar video generation using modern deep learning frameworks.
- Architected and deployed scalable **FastAPI**-based **REST APIs** and webhook services that integrated **LLM-powered** capabilities into web and mobile applications.
- Implemented **Retrieval-Augmented Generation (RAG)** pipelines using **LoRA**-based fine-tuned models and **Qdrant** vector databases for **semantic retrieval**.
- **Built internal AI tools** for prompt engineering, embedding retrieval, semantic search, and conversational memory management.
- **Collaborated with cross-functional teams**, including product managers, designers, and software engineers, to deliver AI-powered healthcare features.
- **Optimized and maintained AI services deployed on AWS**, improving operational stability and deployment reliability.

### PT Neural Technologies Indonesia

June 2024 – Oct 2024

Data Scientist (Intern)

- **Designed and developed NISA**, an **NLP-powered chatbot** for **Telkomsel** using **LangChain**, **LLaMA**, **Ollama**, and **Rasa**, enabling context-aware analysis of network KPIs through natural language interactions.
- **Built AI-driven analytics solutions** using **Prophet-based time-series forecasting models** and **Streamlit dashboards** to support proactive network capacity planning and KPI monitoring.
- **Collaborated with cross-functional teams** to deliver intelligent monitoring solutions, integrating **Large Language Models (LLMs)** and predictive analytics to improve network operations and user experience.

## Education

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| <b>Politeknik Negeri Bandung</b>                                                                                                                                                                                                                                                                                                         | Aug 2021 - Aug 2025   |
| <b>Bachelor of Applied Science in Informatics Engineering</b>                                                                                                                                                                                                                                                                            |                       |
| <ul style="list-style-type: none"><li>Relevant Coursework: Machine Learning, Data Science, Software Engineering, Algorithms, Database Systems, Computer Networks, Enterprise Application Development, Object-Oriented Programming</li><li>Key Projects: Scientific Application Development, Enterprise Application Development</li></ul> |                       |
| <b>SMK Negeri 11 Bandung</b>                                                                                                                                                                                                                                                                                                             | July 2018 - June 2021 |
| <b>Software Engineering</b>                                                                                                                                                                                                                                                                                                              |                       |
| <ul style="list-style-type: none"><li>Focus: PHP, Laravel, CodeIgniter, Database Systems, Software Development Lifecycle</li></ul>                                                                                                                                                                                                       |                       |

## Projects

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| <b>Comparative Analysis of LoRA and DoRA for Fine-Tuning Predictive Models</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | January 2025 – July 2025 |
| <i>Bachelor's Final Project, Politeknik Negeri Bandung</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                          |
| <ul style="list-style-type: none"><li><b>Conducted a comparative evaluation of Parameter-Efficient Fine-Tuning (PEFT) methods</b>, LoRA and DoRA, using LLaMA models for subjective NLP tasks.</li><li>Utilized the Chatbot Arena dataset to evaluate four <b>LLaMA variants across adapter ranks</b>, measuring log loss, training time, inference speed, and memory efficiency.</li><li>Found that <b>DoRA</b> achieved superior accuracy (lower log loss) and better human preference alignment, while <b>LoRA</b> excelled in speed and memory efficiency, proving ideal for resource-constrained environments.</li></ul> |                          |

## Organizational Experience

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| <b>Badan Eksekutif Mahasiswa Politeknik Negeri Bandung</b>                                                                                                                                                                                                         |                     |
| <i>The Staff of The Cabinet Resource Management Specialized Agency</i>                                                                                                                                                                                             | Apr 2023 – Jan 2024 |
| <ul style="list-style-type: none"><li>Manage and allocate resources for student-led initiatives and activities within the student council.</li></ul>                                                                                                               |                     |
| <i>The Staff of The Communication and Information Department, DKV Division</i>                                                                                                                                                                                     | Mar 2022 – Feb 2023 |
| <ul style="list-style-type: none"><li>Developed visual content and designs for communication and promotional materials for student events.</li><li>Collaborated with other departments to create visual assets for internal and external communications.</li></ul> |                     |
| <b>Himpunan Mahasiswa Komputer (HIMAKOM)</b>                                                                                                                                                                                                                       |                     |
| <i>Deputy Head of The Organization Resource Management Specialized Agency</i>                                                                                                                                                                                      | May 2023 – Dec 2023 |
| <ul style="list-style-type: none"><li>Oversee resource management, ensuring smooth operations within the organization.</li><li>Coordinate with other departments to manage resources effectively for student projects and events.</li></ul>                        |                     |
| <i>The Staff of The Department of Research, Technology, and Higher Education</i>                                                                                                                                                                                   | Apr 2022 – Mar 2023 |
| <ul style="list-style-type: none"><li>Assisted in organizing research, technology, and academic-related events and activities.</li><li>Supported the development of academic and technological initiatives for students.</li></ul>                                 |                     |

## Awards and Achievements

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| <b>Silver Medal – AI Mathematical Olympiad: Progress Prize 3</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Apr 2026 |
| <i>Top 1.6% Worldwide (64th / 4,138 Teams)</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |          |
| <ul style="list-style-type: none"><li>Engineered advanced <b>LLM reasoning</b> pipelines combining <b>prompt engineering</b>, <b>test-time reasoning</b>, <b>answer verification</b>, and <b>efficient inference optimization</b>.</li><li>Developed compute-efficient reasoning workflows for solving Olympiad-level mathematical problems with open-source language models.</li><li>Demonstrated expertise in <b>LLM reasoning</b>, <b>competitive AI</b>, and <b>inference optimization</b> under strict computational constraints.</li></ul> |          |

### Student Creativity Program for Scientific Articles (PKM-AI), Incentive Scheme

July 2025

Ministry of Higher Education, Science, and Technology (Kemdiktisaintek)

- Secured a **national research grant** through PKM-AI for the project “*Improving the Interpretability and Efficiency of Large Language Models for Automated Medical Diagnosis.*”
- Focused on enhancing **transparency, efficiency, and reliability** of **LLMs** in **AI-driven healthcare diagnostics**, contributing to more interpretable medical AI systems.
- Recognized by Kemdiktisaintek for **innovation in applied AI research** and real-world healthcare impact.

### **Finalist National Data Science Tournament**

Dec 2023

Cybertrend Data Academy

- Developed “*Towards Security: Integrating WhatsApp OTP MFA with Fraud Detection Systems (FDS)*”, combining **multi-factor authentication** and **AI-based fraud detection**.
- Showcased strong expertise in **data security, model integration, and digital risk prevention**.
- Reached the **national finals**, among the top-performing data science teams in Indonesia.

### The Best Idea in the Internet of Things (IoT) category

Aug 2023

National Polytechnic Informatics Student Competition (KMIPN) V

- Designed **Nialonic-GC Technology**, an AI-driven climate engineering system for **hydroponic–aeroponic plant growth** using IoT automation.
- Recognized for its **innovation in sustainable agriculture and intelligent IoT control systems**.
- Awarded “**The Best Idea**” for originality, technical execution, and societal impact.

## **Certificate**

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### **AI Upskilling Program**

June 2025 - Nov 2026

Remote Skills Academy

- A 14-hour training program as part of the AI Opportunity Funding: Asia Pacific, an initiative by AVPN supported by Google.org and ADB