

EDRICK KESUMA

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WORK EXPERIENCE

AI Full Stack Engineer, COVENA AI

January 2025 – June 2026

Covena develops AI agents to handle end-to-end sales from leads to checkout for B2C companies on WhatsApp.

- Lead the development of the internal FDE optimization platform, **reducing v0 build times by 97% (2 weeks to 8 hours)**:
 - Developed a **no-code Agent Builder** feature that utilizes **Claude workflows** to synthesize production-ready agents from conversation examples, **reducing the "zero-to-80%" development cycle to one hour** by automating prompt and tool generation.
 - Engineered a **Multi-Turn Chat Runner** feature that **automates the evaluation of complex conversational flows**, increasing developer throughput by enabling concurrent, non-blocking testing and **reducing the effective wait time for multi-turn responses by 60%**.
 - Developed an AI debugging pipeline that leverages Claude Code, multi-repo context, and LLM traces to autonomously author PRs for client-specific prompt and tool errors, successfully **fixing 85% of AI agent bugs** with minimal human intervention.
- Engineered full-stack features and infrastructure for the AI platform and CRM, **driving major improvements in scalability and cost efficiency**:
 - Engineered the **foundational WhatsApp Cloud API integration for the CRM**, including webhook-based message parsing, multi-type message sending, and real-time updates via sockets; the architecture now supports **5K+ daily conversations** across multiple clients.
 - Optimized the RAG pipeline by implementing binary quantization on the vectordb, **boosting retrieval speed by 10× and reducing storage by 32×**.
 - Built an in-CRM **message feedback system** that lets clients flag problematic AI responses and logs them to Google Sheets and LangSmith's annotation queue, centralizing error reports and **improving engineers' issue diagnosis efficiency by 30%**.
 - Refactored the AI platform into a stateless architecture, enabling deployment on serverless infrastructure, **reducing cloud instance costs by 90%**.
 - Built the CRM's **knowledge base page** with a card-style interface for documents and FAQs, giving clients full control to add, edit, or remove content; **reduced LLM context iteration time by 40%** and enhanced retrieval accuracy.
 - Developed an **AI analytics dashboard** using PostHog with sales funnels, pie charts, and trend graphs to track conversion rates, user drop-off points, top inquired items, and revenue trends; enabled teams and clients to **identify friction points and optimize business flows** and SOPs.
 - Migrated the Render CI/CD pipeline from repo-based builds to **Docker image-based builds**, improving reusability across deployment platforms.
 - Exposed API routes for AI response generation and message storage, **enabling clients to integrate our AI platform with their external CRMs**.
- Served as an FDE, architecting and deploying custom AI solutions by directly **translating client requirements into production-ready AI sales agents**:
 - Developed a multimodal agent for Tokoparts (Mitsubishi-backed) that extracts part data from images and PDFs, cutting **stock lookup time by 80%**, and automating invoice generation and cart updates on the client's e-commerce platform used by **hundreds of car repair shops**.
 - Built AI agent tools using Google Distance Matrix API to deliver **geolocation-aware responses**.

Notable Clients Served: Garuda Indonesia, Colearn, Ayana, Tokoparts, Xapiens, Protocol

Tech Stacks: LangChain, LangGraph, LangSmith, NextJS, Express, Qdrant, Pinecone, ShadCN UI, WhatsApp Cloud API, PostHog, Docker, MongoDB

HACKATHONS / PROJECTS

[Thesis] CoviDoc

July 2024 – November 2024

CoviDoc enables doctors to manage patient reports, refine AI-suggested lung X-ray illness classifications and prescriptions, and auto-generate PDF reports.

- Researched papers and **trained a lung X-ray illness classification model** in PyTorch, with optimal architecture and parameters from published findings.
- Implemented a RAG-LLM system with prompt engineering for prescription generation to **mitigate model hallucination**.
- Used Grad-CAM to automatically highlight areas of interest in image classification, **enhancing model explainability**.
- Led full-stack development of the MVC-based app as **technical lead in a 5-member team** and set up the GitHub repository with branching conventions.
- Containerized the web app with Docker and deployed it on Google Cloud Platform's Compute Engine service.

Tech Stacks: Pytorch Lightning, LangChain, Docker, Grad-CAM, ReactJS, Flask, Google Cloud Platform, Git, Github, Gemini, ChromaDB. [\[Repository\]](#)

[2nd Place @ Anaconda Data Science Expo 2025] Let Em Cook

September 2023

Let Em Cook is a mobile app that identifies raw ingredients from an image through image segmentation and generates recipes based on them.

- Hosted an SLM for recipe generation, performed prompt engineering and output cleaning via LangChain, and developed the mobile interface in Flutter.

Tech Stacks: Flask, Flutter, LangChain, Pytorch. [\[Repository\]](#)

[Top 1%] Petfinder.my - Pawpularity Contest (Kaggle) [\[Certificate\]](#)

October 2021 – January 2022

Petfinder is a computer vision competition to score pet photo quality (0–100), helping animal rescue organizations take better pictures to boost adoption rates.

- Published an image data analysis notebook exploring key features of high-quality photos and score distribution in the dataset, using PIL and Seaborn.
- Ensembled multiple vision transformer models, reducing RMSE from ~17.34 to ~16.99 and boosting performance from the **bottom 10% to the top 1%**.
- Authored the team's [winning solution writeup](#) and [deep learning resources post](#), earning 28 and 53 upvotes respectively.

Tech Stacks: Pytorch Lightning, Timm, FastAI, Albumentations, PIL, Seaborn, Numpy, Pandas, Matplotlib

EDUCATION

University of Wollongong

Bachelor of Computer Science, Big Data

Cumulative Grade: 86.1/100 (**High Distinction**). Received the **Dean's Merit List Award twice**. Awarded to the **top 1%** of students in the program.

TECHNICAL SKILLS

Languages	Python, TypeScript, JavaScript, Java, C++, C, HTML, CSS, SQL
Web Stack	ReactJS, ExpressJS, NextJS, Flowbite, ShadCN UI, Tailwind CSS, Flask, PostHog
Developer Tools	Github, Postman, Figma, Draw.io, Docker, GCP, AWS, Render
AI Stack	LangChain, LangGraph, LangSmith, Langfuse, Qdrant, Pinecone, Pytorch, Tensorflow, Numpy, Matplotlib, Seaborn, OpenCV, PIL
Skills	AI Agent Development, Computer Vision, Full-stack Web Development, MVC, API Testing, Cloud Deployment, CI/CD
Spoken Languages	English (Professional), Bahasa Indonesia (Native), Chinese (Limited Proficiency)