

# REYDIKO FAKHRAN HAIDI

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portfolio: <https://portfolio-app-oroalvhteyxvlpe5hthim8.streamlit.app/>

## SUMMARY

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A Fresh Graduate Applied Data Science with one year of experience as a Machine Learning Engineer intern—six months each at PDAM Surya Sembada Surabaya and Telkom Surabaya. I hold a BNSP Data Scientist certification (November 2024) and specialize in building and deploying ML models for real-world applications. My core skills include NLP, image segmentation, image classification, object detection, and developing API-based ML model integration. Passionate about Machine Learning, AI, and Computer Vision, I enjoy creating end-to-end solutions and continuously keep up with evolving technologies and industry practices.

## EXPERIENCE

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### Internship at Telkom Indonesia

Machine Learning Engineer (July 2024 – December 2024)

- Developing a Machine Learning-based Customer Service Chatbot for WhatsApp
- Building an NLP pipeline: data preprocessing, text classification model fine-tuning, model evaluation, and hyperparameter tuning.
- Implementing question embeddings and integration with a Large Language Model (LLM).
- Applying if-else logic to handle response variations based on model classification results.
- Integrating the chatbot into a Node.js server and WhatsApp API to serve customers in real time.

### Internship at PDAM Surya Sembada Surabaya

Machine Learning Engineer (January 2024 – July 2024)

- Developing a Generative AI system based on PDAM's internal database to automatically answer customer inquiries
- Designing the chatbot system architecture (React + Flask + LLM) to process user queries and return relevant responses.
- Building an NLP pipeline: question normalization, out-of-topic detection, text classification, named entity recognition, and text-to-text generation.
- Integrating LLM model outputs with the company's internal API to generate narrative answers aligned with customer data.
- Implementing PDAMBot, capable of providing real-time information on zones, tariff codes, billing, and customer water usage.

### Community Service Program at Yayasan Dana Sosial AI-Falah Surabaya

Data Analyst (July 2023 – Sept 2023)

- Cleaning, validating, and preprocessing data related to collected funds and distributed funds from various internal sources.
- Analyzing donation trends and patterns using statistical methods and data visualization.
- Applying clustering methods (K-Means) for donor and beneficiary segmentation based on behavior and characteristics.
- Developing forecasting models (ARIMA/Prophet) to predict collected and distributed funds for upcoming periods.
- Building an interactive dashboard using Power BI to present insights to YDSF management.

### Awardee at Bank Indonesia Scholarship (GenBI PENS)

Staff of The Media and Information Division (April 2023 – April 2025)

- Participating in all Bank Indonesia events, including webinars, leadership training, etc.
- Serving as a photographer and videographer at all GenBI PENS Work Program activities.

## PROJECT

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### Generative AI Chatbot Based on PDAM Surya Sembada Database API

Developed a secure, intelligent generative AI chatbot connected to PDAM's internal database to provide contextual and narrative responses to customer queries. (December 2024 – April 2025)

- Fine-tuned RoBERTa for intent classification, BERT for NER, and Cendol-mT5 for text generation, comparing models and selecting the best for each task.
- Implemented question normalization (slang, typos) for Bahasa Indonesia.
- Built an API gateway for secure access to PDAM's internal database.
- Designed and developed a ReactJS-based frontend.

### Tooth Disease Detection API using Image Segmentation with UNet and UNet-ResNet50 Backbone

Developed an API-based machine learning model for detecting dental diseases in panoramic radiographs using image segmentation techniques. The system performs multi-class detection of Resorption, Caries, Periapical Lesion, and Impaction, comparing both UNet and UNet with

ResNet50 backbone. (January 2025 – April 2025)

- Built and trained deep learning models for semantic segmentation using PyTorch.
- Evaluated model performance on imbalanced multiclass datasets with preprocessing and augmentation techniques.
- Deployed the best-performing model as a RESTful API using Flask for external application integration.

**Customer Service Chatbot for Telkom Witel Suramadu on WhatsApp**

Built a customer service chatbot integrated with WhatsApp, combining text classification models and rule-based logic to generate automated, accurate responses for Telkom customers. (July 2024 – December 2024)

- Developed a text classification pipeline for customer queries.
- Fine-tuned models with Telkom Customer Service QnA dataset.
- Applied hyperparameter tuning and evaluated models using accuracy and confusion matrix.
- Integrated the model with WhatsApp API through a backend server.
- Implemented if-else rule-based logic to refine responses according to classification results.

**IT Career Recommendation Expert System**

Developed an expert system to recommend IT career paths (Backend Developer, Data Scientist, Frontend Developer, Product Manager, and UI/UX Designer) based on responses to a multiple-choice questionnaire. (April 2025)

- Trained Random Forest, XGBoost, and MLPClassifier on career preference datasets to identify the best-performing model.
- Performed preprocessing with label encoding and evaluated models using accuracy and classification report.
- Deployed the best model as a Flask API for real-time recommendation delivery.

**SERTIFICATION**

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**BNSP Data Scientist Competency Certification**

National Professional Certification Agency (BNSP) | Issued Nov 2024 · Valid until Nov 2027

- Credential ID: No. 62090 2120.99 06 0000142 2024
- Field: Data Science, Machine Learning, and Artificial Intelligence (AI)

**BNSP Customer Relationship Management (CRM) Competency Certification**

National Professional Certification Agency (BNSP) | Issued Nov 2024 · Valid until Nov 2027

- Credential ID: No. 70209 4229 0 00660 2024
- Field: Customer Relationship Management (CRM)
- Qualification/Competency: Junior Service Quality Officer (JSQO)

**ORGANIZATION**

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**Himpunan Mahasiswa Teknik Informatika (HIMIT) PENS**

Expert Staff in Art and Sports Department (August 2023 – June 2024)

- Event Coordinator for HIMIT Sehat.
- Event Coordinator for HIMIT Boost
- Controlling Management In Sport HIMIT Community

**EDUCATION**

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**ELECTRONIC ENGINEERING POLYTECHNIC INSTITUTE OF SURABAYA**

Bachelor of Applied Data Science (B.Sc.) (2021 – 2025)

- Current Cumulative GPA : 3.73 / 4.0.

**ADDITION**

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**Languages**

- Bahasa Indonesia (Fluent), English (Accurate)

**Technical Skills**

- Programming: Python (Transformers, NumPy, Pandas, Matplotlib, Seaborn, scikit-learn, Plotly, TensorFlow, PyTorch, OpenCV, Keras, Django, NLTK, SciPy, Statsmodels, ggplot), R (caret, mlr, prophet, glmnet, ggplot2, readr, tidyr, dplyr, Shiny)
- Dashboard & Visualization: Power BI, Google Data Studio, Microsoft Excel
- Databases: MySQL, PostgreSQL, ChromaDB, FAISS

**Soft Skills**

- Leadership, Teamwork, Analytical Thinking, Continuous Learning, Adaptability