

Ikrar Gempur Tirani

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SUMMARY

Informatics Engineering student at Hasanuddin University (GPA 3.91/4.00) specializing in Artificial Intelligence with hands-on experience in machine learning, natural language processing, and statistical modeling. Proficient in Python, TensorFlow, and PyTorch with experience building end-to-end ML systems from data preprocessing to deployment. Currently leading Creative Media Division at Google Developer Groups on Campus, combining technical expertise with strong communication and leadership skills.

EDUCATION

Hasanuddin University

Bachelor of Informatics Engineering – GPA: 3.91/4.00

Makassar, South Sulawesi

Aug. 2023 – Present

MAN Insan Cendekia Gorontalo

Science

Gorontalo

Aug. 2020 – June 2023

TECHNICAL SKILLS

Programming Languages: Python, SQL, JavaScript, TypeScript, Java, C++, Dart

Data Science & Machine Learning: TensorFlow, PyTorch, Scikit-learn, Pandas, NumPy, NLTK, Hugging Face

Data Analysis & Visualization: Jupyter Notebook, Matplotlib, Seaborn, Statistical Modeling

Databases: MySQL, PostgreSQL, Supabase, Firebase

Tools & Platforms: Git, GitHub, Google Colab, VS Code, Railway, Vercel

Web & App Development: Next.js, React, Node.js, Express.js, Flask, Flutter, HTML/CSS

Languages: Bahasa Indonesia (Native), English (Upper-Intermediate), Arabic (Intermediate)

PROJECTS

E-Commerce Trust Simulation with Machine Learning Agents

Sep. 2025 – Nov. 2025

Simulation and Modeling Course

- **Tech Stack:** Python, MESA (ABM Framework), Llama 3.1 8B, Ollama, Pandas, NumPy, SciPy, Matplotlib, Seaborn, Git
- Simulated e-commerce marketplace with 7,500+ autonomous agents (1,200 genuine reviewers, 380 fake reviewers, 6,000 shoppers) across 20 iterations to analyze consumer vulnerability to coordinated fake review campaigns.
- Demonstrated that fake review attacks increase conversion rates by 54-72 percentage points in low-quality products through rigorous statistical validation (Chi-Square: $X^2=121-177$, $p < 0.0001$; ANOVA; Cramer's V).
- Engineered 3 behavioral personas (Impulsive, Careful, Skeptical) with LLM-powered decision logic using local Llama 3.1 8B, generating 1,580+ realistic reviews while eliminating cloud API costs.
- Built automated data analysis pipeline with temporal visualizations and statistical reports demonstrating market manipulation patterns relevant to e-commerce fraud detection.

Financial News Aspect-Based Sentiment Analysis

Sep. 2025 – Nov. 2025

Natural Language Processing Course

- **Tech Stack:** Python, PyTorch, Hugging Face Transformers, Scikit-learn, Pandas, NumPy, Matplotlib, Seaborn, CUDA, Git
- Developed NLP pipeline for aspect-based sentiment analysis on financial news dataset (14,446 samples) to enable entity-level market sentiment tracking, fine-tuning RoBERTa-base model (124M parameters) and achieving 90.74% F1-macro score and 90.64% accuracy.
- Implemented anti-leakage data splitting and exploratory data analysis revealing severe class imbalance (60% neutral), informing weighted loss and regularization strategy.
- Applied multiple regularization techniques (weighted cross-entropy, label smoothing, dropout, L2 regularization, early stopping) achieving optimal model performance at epoch 6 with robust generalization to test set.
- Optimized training with AdamW optimizer, gradient clipping, and learning rate warmup on GPU (NVIDIA RTX 3060), demonstrating efficient deep learning pipeline development.

Medical Anamnesis Chatbot with NLP (Chatbot PUSTU)

Aug. 2025 – Dec. 2025

Natural Language Processing Course

- **Tech Stack:** Python, Scikit-learn, Flask, Next.js, Gemini Flash 2.0 API, Git

- Built full-stack medical chatbot achieving 92.61% intent classification accuracy using Multinomial Naive Bayes with TF-IDF vectorization (5000 features, n-grams 1-2) to streamline patient anamnesis workflow for Indonesian Puskesmas healthcare workers.
- Automated training data generation using Gemini Flash 2.0 API with custom prompt engineering, creating 14,000 balanced samples across 14 intent classes for Indonesian medical terminology with validation pipeline.
- Built custom NLP preprocessing pipeline from scratch (slang normalization, stopword filtering) and dictionary-based NER system covering 97 symptom types and 23 body locations for Indonesian medical text without external NLP libraries.
- Implemented stateful dialog management with smart prefilling algorithm and hybrid prediction (ML model + keyword boosting, confidence 0.90-0.95) for seamless 14-stage conversation flow.
- Deployed full-stack application on Railway (Flask backend) and Vercel (Next.js frontend) with PDF export functionality and 24/7 availability for healthcare workers.

EXPERIENCE

Fullstack Developer <i>Cirebon Kuring Cafe</i>	June 2025 – Present Remote
• Developing web and mobile application using TypeScript (Next.js) and Flutter with PostgreSQL database architecture currently in pre-launch phase.	
• Designing database schema and data models to manage cafe operations, inventory tracking, and customer order systems.	
• Collaborating with stakeholders to gather requirements and translate business needs into technical specifications.	
Head of Creative Media Division <i>Google Developer Group on Campus - Hasanuddin University</i>	Aug. 2025 – Present <i>Makassar, South Sulawesi</i>
• Lead team of 6 members, growing Instagram community by 46% (2,800 to 4,100 followers) and generating 1M+ total content views since August 2025.	
• Achieved record monthly performance of 515K views in October 2025, representing 25x improvement from pre-leadership baseline through strategic content optimization and audience targeting.	
• Analyze social media engagement metrics using Instagram Insights to inform data-driven decisions on content format, posting schedules, and creative direction.	
• Collaborate with Product, Engineering, and Business divisions to align creative strategy with community growth and technical event objectives.	
Head of Creative Media Division <i>Coder Institute Hasanuddin University</i>	Feb. 2025 – Present <i>Makassar, South Sulawesi</i>
• Lead creative team to produce visual content, event documentation, and promotional materials for university coding community.	
• Coordinate with technical and organizational teams to support community initiatives and educational programs.	
• Manage content production workflow ensuring consistent brand identity across social media platforms.	
Publication, Design, and Documentation Coordinator <i>Recursion UH</i>	Sep. 2024 – Apr. 2025 <i>Makassar, South Sulawesi</i>
• Coordinated publication and creative strategy for inaugural national-level informatics competition organized by Hasanuddin University, featuring CTF, UX Design, ICT Business Plan, and Competitive Programming tracks.	
• Built social media presence from ground up, achieving 894 followers and 96+ published content pieces across Instagram platform within 8-month period.	
• Designed promotional materials, infographics, and technical documentation to support competition promotion and participant communication across multiple university campuses.	

ORGANIZATION

Google Developer Group on Campus - Hasanuddin University <i>Member</i>	Nov. 2023 – Aug. 2025 <i>Makassar, South Sulawesi</i>
• Actively participated in technical workshops and study jams before promotion to leadership role.	
• Contributed to community initiatives and technical projects during 2-year membership period.	

ACHIEVEMENTS

Finalist – UI/UX Design Competition, Identitas Manajemen Informatika Politeknik Astra 2024