Muhammad Hilmi Asyrofi

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SUMMARY

- ML Engineer with 5+ years of experience designing, deploying, & optimizing cloud-native AI solutions at scale
- Proven track records of leading cross-functional collaborations to drive business impact and revenue growth
- Kaggle Expert (top 1.5%), AWS Certified Solutions Architect & ML Specialty, and AWS Community Builder

EXPERIENCES

Machine Learning Engineer — Singapore
PropertyGuru – Data Science Center of Excellence — Jun 2022 - present

- **Automated Ads Pricing System**
  - Architected a demand/supply-based pricing engine for Southeast Asian markets (SG, MY, TH, VN).
  - Incorporated LLM-powered price analysis to flag outliers and ensure data quality.
  - Boosted marketplace revenue by **+11% YoY** (from 35M to 39M) through pricing simulations and revenue forecasting dashboards. [PropertyGuru Q2 2024 Earning Report]
- **Enterprise Data Product**
  - Built an Automated Valuation Model for enterprise customers (including Knight Frank & RHB Bank) to streamline property valuation. [PropertyGuru Engagement with Knight Frank Malaysia]
  - Built an NLP-based address matching system that improved matching accuracy by 70% over legacy rules.
- **Generative AI Advocacy**
  - Promoted Generative AI capabilities to internal stakeholders for business adoptions, including RAG for chatbot use cases and multi-modal Gen AI for image-text moderation.
  - Earned recognition from engineering leaders for developing PropertyGuruGPT, a context-aware AI assistant showcased at an internal hackathon.

AI Research Engineer — Singapore
School of Computing and Information System, Singapore Management University — Nov 2019 - May 2022

- Conducted **research on Software Engineering for AI-Enabled Systems** (SE4AI) supervised by ACM Distinguished Scientist Prof David Lo, Director of Information Systems & Technology Cluster. [reference]
- **Published 7 papers** in top-tier international conferences and journals (IEEE TSE & ACM ESEC/FSE) covering real-time bias detection, Machine Learning testing, and coverage metrics for deep learning. [Google Scholar]
- Pioneered Docker-based containers on an Nvidia DGX Supercomputer to improve ML projects reproducibility.

Co-Founder & CTO — Indonesia
AlinaMed - Pitch Deck — Jan 2019 - Jul 2020

- Led health-tech solution development across the **software development lifecycle** (SDLC), ensuring reliability and scalability through strategic architectural decisions on frameworks & cloud infrastructure.
- Secured IDR 750 million funding from Telkom Indonesia and won multiple **startup awards**, including 1st Winner at Bank Mandiri's Wirausaha Muda Mandiri and 1st Winner at Tech-to-Impact by UK-ID Tech Hub.

EDUCATION

Institut Teknologi Bandung (ITB) — Indonesia
Bachelor of Computer Science — 2015 - 2019

- Graduated **Cum Laude** with **GPA 3.68** / 4.00
- Recognized as an **inspiring graduate** for academic excellence and extracurricular achievements. [Featured ITB's News]

CERTIFICATIONS

Cloud	AWS Machine Learning Specialty	Credential ID: cd500dfa03634614a06cd0a0d0e830cd
Cloud	AWS Solutions Architect Associate	Credential ID: ECHZM6M1XEE4QDSB

TECHNICAL SKILLS

Programming Languages	Python, C++, Java, JavaScript, React, Golang
Cloud Platforms	AWS (SageMaker, Lambda, EC2), GCP (BigQuery, Cloud Composer)
ML Library & Frameworks	Scikit-learn, PyTorch, TensorFlow, OpenCV
MLOps & Data Pipeline	Airflow, Google Cloud Composer, AWS MWAA
CI/CD & Deployment	GitHub Actions, Buildkite, Jenkins, ArgoCD, Kubernetes, Docker
Monitoring & Reliability	DataDog, AWS CloudWatch, StatusCake
Database	MongoDB, DocumentDB, MySQL, BigQuery

SELECTED ACHIEVEMENTS

2025 **AWS Community Builder**
Selected for AWS's global program recognizing active contributors to the AWS cloud community.

2024 **LinkedIn Top Voice - Machine Learning**
Recognized as a top 1% contributor in the Machine Learning community. [LinkedIn Post]

2021 **Kaggle Competitions Expert**
Placed in the top 1.5% worldwide with two medals in NLP and CV competitions. [LinkedIn Post]

- **Bronze Medal**: Evaluated essays using DeBERTa for feature embeddings and fine-tuned NN layers.
  [Kaggle Leaderboard] Top 7% (170 from 2,654)
- **Silver Medal**: Developed e-commerce product matching model using EfficientNet + BERT for embeddings.
  [Kaggle Leaderboard] Top 5% (101 from 2,426)

2011 **Mathematics Olympiad Bronze Medal |** Awarded by Ministry of Education, Indonesia. [Certificate]

SELECTED PUBLICATIONS

Muhammad Hilmi Asyrofi, Yang Zhou, Imam Nur Bani Yusuf, Hong Jin Kang, Ferdian Thung, and David Lo. "**BiasFinder: Metamorphic Test Generation to Uncover Bias for Sentiment Analysis Systems**". *IEEE Transaction on Software Engineering (Q1, CCF Rank A, Impact Factor 6.11)*. [PDF | GitHub | DOI]

Zhou Yang, Jieke Shi, Muhammad Hilmi Asyrofi, and David Lo. "**Revisiting Neuron Coverage Metrics and Quality of Deep Neural Networks**". *28th IEEE International Conference on Software Analysis, Evolution and Reengineering (SANER).* Honolulu, Hawai. March 2022. [PDF | GitHub]

Muhammad Hilmi Asyrofi, Zhou Yang, Jieke Shi, Chu Wei Quan, and David Lo. "**Can Differential Testing Improve Automatic Speech Recognition Systems?**". *37th IEEE International Conference on Software Maintenance and Evolution (ICSME)*. Luxembourg. September 2021. [PDF | GitHub | DOI]

Zhou Yang, Harshit Jain, Jieke Shi, Muhammad Hilmi Asyrofi, and David Lo. "**BiasHeal: On-the-Fly Black-Box Healing of Bias in Sentiment Analysis Systems**". *37th IEEE International Conference on Software Maintenance and Evolution (ICSME)*. Luxembourg. September 2021. [PDF | GitHub | DOI]

Google Scholar for a full list of publications

LEADERSHIP & INTERPERSONAL SKILLS

- Actively build professional connections through **tennis & golf**, fostering collaboration and industry knowledge exchange
- Awarded Top 10 Scholarship by Rumah Amal Salman ITB for demonstrated leadership potential
- Completed leadership training from Siam Cement Group (SCG), focusing on communication and team-building

I declare the details stated to be true and complete.
(This resume is updated on March 5th, 2025)