

## Muhammad Hilmi Asyrofi

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📄 [github.com/mhillmiasyrofi](https://github.com/mhillmiasyrofi) | [linkedin.com/in/mhillmiasyrofi/](https://www.linkedin.com/in/mhillmiasyrofi/) | Singapore Permanent Resident

### SUMMARY

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- 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

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#### Machine Learning Engineer

Singapore

PropertyGuru – Data Science Center of Excellence

Jun 2022 - present

- **Automated Ads Pricing System for Regional Marketplace**

- Architected a demand/supply-based pricing engine for Southeast Asian markets (SG, MY, TH, VN).
- Integrated LLM-powered price analysis to detect anomalies and enhance price accuracy & coverage.
- Boosted revenue by **+11% YoY** (\$35M → \$39M) through dynamic pricing optimization [Q2 2024 Earning]

- **Enterprise Data Product**

- Productionized an Automated Valuation Model for enterprise customers (including Knight Frank and RHB Bank) to streamline property valuations. [ [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 LLM for image-text moderation.
- Earned recognition from engineering leaders for prototyping PropertyGuruGPT, a domain-specific AI assistant built with LangChain and vector databases using a RAG architecture. [ [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 bias detection, ML testing, and coverage metrics for deep learning. [ [Google Scholar • 260 citations](#) ]
- 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 **end-to-end development of health-tech solutions** throughout the software development lifecycle (SDLC) with strategic architecture decisions on frameworks & cloud infrastructures to ensure reliability and scalability.
- Secured IDR 750 million funding from Telkom Indonesia and **won multiple startup awards**, including 1<sup>st</sup> Winner at Bank Mandiri's Wirausaha Muda Mandiri and 1<sup>st</sup> Winner at Tech-to-Impact by UK-ID Tech Hub.

### EDUCATION

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#### 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

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**Cloud** AWS Machine Learning Specialty

Credential ID: [cd500dfa03634614a06cd0a0d0e830cd](#)

**Cloud** AWS Solutions Architect Associate

Credential ID: [ECHZM6M1XEE4QDSB](#)

## SELECTED ACHIEVEMENTS

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- 2025 **AWS Community Builder** | Machine Learning  
Selected by AWS as a community builder for impactful contributions to the global AWS ML community.
- 2024 **LinkedIn Top Voice** | Machine Learning  
Recognized as a top 1% contributor in the LinkedIn's Machine Learning community. [ [LinkedIn Post](#) ]
- 2021 **Kaggle Competitions Expert**  
Achieved top 1.5% global ranking, earning medals in NLP & Computer Vision competitions. [ [LinkedIn Post](#) ]
- **Bronze Medal:** Built a DeBERTa-based NLP model for automated essay evaluation [ [Kaggle Leaderboard](#) ] Top 7% (170 from 2,654)
  - **Silver Medal:** Leveraged EfficientNet + BERT feature embeddings for e-commerce product matching [ [Kaggle Leaderboard](#) ] Top 5% (101 from 2,426)
- 2011 **Mathematics Olympiad Bronze Medal** | Awarded by Ministry of Education, Indonesia. [ [Certificate](#) ]

## TECHNICAL SKILLS

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

## SELECTED PUBLICATIONS

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- 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, Hawaii. 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

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- Actively build professional networks through **tennis and golf** to foster collaboration and industry knowledge exchange
- Awarded Top 10 Scholarship by Rumah Amal Salman ITB for outstanding leadership potential
- Completed leadership training at Siam Cement Group (SCG) emphasizing communication and team-building skills

I declare the details stated to be true and complete.  
(This resume is updated on June 21<sup>st</sup>, 2025)