

## Muhammad Hilmi Asyrofi

✉ mhillmiasyrofi@gmail.com | ☎ (+65) 85472451

📖 A machine learning enthusiast is looking for challenging opportunities

📄 [github.com/mhillmiasyrofi](https://github.com/mhillmiasyrofi) | 🌐 [mhillmiasyrofi.github.io](https://mhillmiasyrofi.github.io) | 🔗 [linkedin.com/in/mhillmiasyrofi/](https://linkedin.com/in/mhillmiasyrofi/)

## EDUCATIONS

### Institut Teknologi Bandung

Bandung, Indonesia

Bachelor of Computer Science

2015 - 2019

- **Cum Laude** with GPA 3.68 / 4.00 ([transcript](#))
- [I was honored as an inspiring graduate](#) because of my outstanding academic and non-academic achievements

### Vrije Universiteit Amsterdam

Amsterdam, Netherlands

Summer School Student of "Big Data in Society" Advanced Bachelor Course

July 2018

- Achieved excellent A grade ([transcript](#))

## EXPERIENCES

### Research Engineer <> Fulltime

Singapore

School of Computing and Information System, Singapore Management University

Nov 2019 - present

- Conducted research on **Machine Learning Testing** supervised by ACM Distinguished Scientist [Prof David Lo](#)
- **Published** 6 papers in reputable software engineering conferences, i.e., ACM ESEC/FSE, IEEE SANER, and IEEE ICSME
- Experienced in **maintaining** various PyTorch and TensorFlow ML projects using Docker

### Co-Founder & CTO <> Self-employed

Surabaya, Indonesia

Alinamed - [Company Profile](#), [Playstore](#), [AppStore](#), [Website](#)

Jan 2019 - July 2020

- **Managed the software development lifecycle** by collaborating across members to evolve SDLC, including functional requirements analysis, design specification, technical code review, project planning, and implementation of applications
- Managed the selection of programming languages, frameworks, cloud, web servers, databases, and mobile
- Won prestigious startup **competitions**, e.g., [1<sup>st</sup> Winner at WMM by Bank Mandiri](#), 1<sup>st</sup> Winner at Startup Weekend Surabaya, Winner at Tech-to-Impact by UK-ID Tech Hub. Secured IDR 750 million **investment** from Telkom Indonesia

### Machine Learning Engineer <> Internship

Jakarta, Indonesia

Bukalapak

May 2018 - Aug 2018

- Developed **object detection** as a part of the "search by image" feature. It's implemented using [Faster RCNN](#) on Tensorflow
- Developed **character recognition** to detect seller's information (e.g., phone number and Instagram username) in the e-commerce product image. Localized text lines using CTPN (Connectionist Text Proposal Network). Implemented post-processing techniques on OpenCV to combine several words within the same context

## HONORS & AWARDS

- 2021 **Silver Medal | Top 5% (101 from 2,426) | Shopee Price Match Guarantee | [Kaggle Leaderboard](#)**  
The task was predicting similar e-commerce products by using product images and titles. I utilized EfficientNet and NFNet to extract feature embeddings from images and utilized BERT and TFIDF to extract feature embeddings from texts. I calculated the cosine distance between products and employed k-NN to find similar products
- 2021 **Top 3% (28 from 1,034) | Shopee Code League Data Science Challenge | [Kaggle Leaderboard](#)**  
The challenge was extracting Point of Interest (POI) names and street names from unformatted Indonesia addresses collected by Shopee. I framed the challenge as NER (Named Entity Recognition), where POI and street are the extracted entities. Then, I fine-tuned the IndoNLU model on the customized dataset.
- 2019 **Gojek Upscale 02 for Indonesia's Data Science Enthusiast | [Certificate](#)**  
A complete two-day experience from the **Gojek data science** team. It covered machine learning, data modeling, and Gojek data science practices. I was one of 20 chosen participants out of 1,000 applicants
- 2019 **Southeast Asia Machine Learning School (SEA MLS)**  
A five-day ML training event held by [Southeast Asia's AI experts](#) working at DeepMind UK and Google Brain USA. I was one of 200 chosen participants out of 1200 applicants across Southeast Asia and India
- 2011 **Bronze Medal | Mathematics Olympiad at 2<sup>nd</sup> National Science Camp | [Certificate](#)**  
Awarded by Ministry of Education - Indonesia

## TECHNICAL SKILLS

Programming	<b>Proficient</b> Python, C++	<b>Experienced</b> Golang, Javascript, Java, C, PHP, HTML, CSS, C#
Database	<b>Proficient</b> MySQL	<b>Experienced</b> PostgreSQL, MongoDB

## MACHINE LEARNING CERTIFICATE

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Deeplearning.AI	Neural Network and Deep Learning Credential ID: <a href="#">D8GK6SD6Y5TG</a>
Deeplearning.AI	Improving Deep Neural Networks: Hyperparameter Tuning, Regularization and Optimization Credential ID: <a href="#">SGC98U3G8K6P</a>

## PUBLICATIONS

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- 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](#)
- 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](#)
- Muhammad Hilmi Asyrofi, Yang Zhou, and David Lo. "CrossASR++: A Modular Differential Testing Framework for Automatic Speech Recognition". 29th ACM Joint European Software Engineering Conference and Symposium on the Foundations of Software Engineering (ESEC/FSE '21). Athens, Greece. August 2021. [PDF](#) [GitHub](#) [Video](#) [DOI](#)
- Zhou Yang, Muhammad Hilmi Asyrofi, and David Lo. "BiasRV: Uncovering Biased Sentiment Predictions at Runtime". 29th ACM Joint European Software Engineering Conference and Symposium on the Foundations of Software Engineering (ESEC/FSE '21). Athens, Greece. August 2021. [PDF](#) [GitHub](#) [Video](#) [DOI](#)
- Muhammad Hilmi Asyrofi, Ferdian Thung, David Lo, and Lingxiao Jiang. "CrossASR: Efficient Differential Testing of Automatic Speech Recognition via Text-To-Speech". 36th IEEE International Conference on Software Maintenance and Evolution (ICSME). Adelaide, Australia. October 2020. [PDF](#) [GitHub](#) [Video](#) [DOI](#)
- Muhammad Hilmi Asyrofi, Ferdian Thung, David Lo, and Lingxiao Jiang. "AUSearch: Accurate API Usage Search in GitHub Repositories with Type Resolution". 27th IEEE International Conference on Software Analysis, Evolution and Reengineering (SANER). Ontario, Canada. February 2020. [PDF](#) [GitHub](#) [Video](#) [DOI](#)

## SOFTWARE ENGINEERING PROJECTS

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Python	<b>PiGlass - Hear Your Text</b>   <a href="#">1<sup>st</sup> Winner at a Competition on Building Device for Visually Impaired People</a> Developed a device for visually impaired people to help them hear what they see. It's powered by a RaspberryPI as a processing unit. It captured an image using a camera, recognized texts and then output voices
Javascript	<b>PR Ojek   Web Development Course Project</b> An online platform for taxi bikes to help people find a taxi bike easily. It's implemented in MEAN Stack development. There was a chatting feature using the REST service. The project used MongoDB as database
Java, Android	<b>Sinau - Find Your Tutor Here   Gemastik Semifinalist - Apps Development</b> An android-based chatting app developed for student and mentor to make the communication easily

## INTERPERSONAL SKILLS

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- 2018     **Granted Scholarship** from Rumah Amal Salman ITB. This scholarship focused on **capacity building** to create future leaders. I was awarded as **top 10 awardees** of this scholarship
- 2017     Selected participants to take **leadership training** from Siam Cement Group (SCG). Designed by SCG Learning, the program aims to give participants **fundamental leadership concepts** and provide them opportunities to **practice the interpersonal skill** with other young leaders

I declare the details stated to be true and complete.  
(This resume is updated on November 8<sup>th</sup>, 2021)