Rayhan Titho Kharisma

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Professional Experience

Fairphonic / provides ML solution to fight copyright infringements.   Singapore
ML Engineer - Freelance/Part-time   Nov 2022 – Present

• Built and drove the research of music similarity ranking, which would be the newest product of the company. The product will convert mp3 file (time domain) to frequency domain, and then calculate similarities compared to 1 M song database. The product's purpose is to find potential copyright infringement from the database
• Improved fingerprinting inference time by 10%, this is done by precalculating the features.
• Reduce latency in specific table in production DB by moving the production DB to analytics WH in Big Query. This reduces latency and reduce timeout error but increase cloud bill.

PT Freeport Indonesia (PTFI) / Largest mining company in Indonesia ($29B Market cap)   Indonesia
Mid Data Scientist - Full time   May 2023 – Present

Most of projects here are very new and still on going. PTFI's DS team is built in 2022.
• Involved in safety analytics project. This project's purpose is to analyze user input form about planned safety inspection. Potential benefit of this project is reducing time to analyze safety data. There's several insights along the project that helps to improve form's quality.
• Involved in projected tonnage project. This project aims to accurately project tonnage output in a near realtime fashion. This project also aims to detect bottleneck that results underperform tonnage output. There are several insights along the project that helps stakeholder to make decision, such as which station that has high waiting time.

Kredivo / Biggest fintech in Indonesia ($1.6B valuation)   Indonesia
Junior Data Scientist - Full time   June 2022 – February 2023

• Designed and Built the first audio input machine learning model for the company. The model predicts whether a recording file is a voicemail or not. Due to the distinct features between recorded sounds and actual human sounds, the model achieved 99% precision and recall. The implemented model helps the company to prevent a $400 loss in a day due to the recording auditors don't need to evaluate voicemail recordings.
• Analyzing and giving insights to decision-makers regarding when to abandon a write-off user. Write-off users are user who don't pay back after 180 days. Getting the insight by doing survival analysis and cohort analysis. The total write-off number was more than $60 mio between 2018 - 2023, any improvement in this project will be quite massive.
• Generate weekly report regarding model performances and also giving adhoc analysis about few anomalies that happened during the week.

Sayurbox / Leading tech grocery in Indonesia   Indonesia
Junior Data Scientist - Full time   June 2021 – June 2022

• Initiated, created, and deployed the first ever company's recommendation system. Improved key metrics such as ATC rate (Add to Cart) up to 8% improvement, and Check Out Rate up to 7% improvement. There are two recommendation models, first is applied in home page. First model utilize similar users according to historical spending behavior. Second model is applied in Check out page. Second model utilize association rules to output: "given (x,y,z) items in the cart, other users also buy (a,b,c) items".
• Helped the Data Scientist in charge of auto driver routing to deploy the model to production. The old production requires Jenkins to manually trigger the model, the new production can be accessed through a simple API hosted internally (access through VPN).

Ebdesk Teknologi / Leading data-drivent media consultant in Indonesia   Indonesia
Data Scientist - Full time   March 2020 - May 2021

• Created a Semantic Role labeling model; a model that classifies who is the actor, what is the verb, and what is the object, a word-level classification model. The model was used to provide features for postag segementation model and sentiment classification model.
• I also helped to develop a new version of sentiment analysis model so it can outputs a the most influential word to the sentiment output. It helps the product team to explain sentiment classification output to end clients.
• I also helped to develop company's labeling system. The company needed a maintained labeling system in order to maintain new data stream to feed models. Before the labeling system is applied, usually we manually send csv files to annotator team for them to annotate. The labelled rows are usually between 100-300 rows a week spanning across english news and indonesian news. After the labelling system is used, the system automatically download annotated data and upload new unannotated data. By doing this, the number of labelled rows in a week went up to 400 a day or 2000 rows a week (400% improvement from 300 rows a week).

Education

Universitas Gadjah Mada
B. Eng in Electrical Engineering   Aug 2015 - Nov 2019
Universitas Indonesia
M.Eng in Information Technology   Aug 2021 - Present

Personal Projects Portofolio

Vessel Sound Classification is a project where we have blood vessel recorded sounds (arteries and veins), and we tried to classify them using ML model. This project is part of my lecturer's PhD thesis in UGM.

Realtime Ocean Data Dashboard (Semar Dashboard) is a project where I build a Dashboard using Django to visualize data from Copernicus's satellite (openly available). This project is part of my master's degree subject's final assignment. We also collaborated with BRIN to build this dashboard. This dashboard's purpose is to help fishermen to locate nearest possible fishing area and to know generally about ocean data.

MNIST Triplet Loss is a project that does not have to do with any parties, just me satisfying my curiosity about Triplet Loss function. Triplet loss maximizes distance between different classes and minimize distance between same classes. More about tensorflow's triplet loss implementation can be read here. This project applied Triplet Loss function to classify the MNIST Dataset.

You can find more about my personal projects portofolio in my github repos.

Skills & Stacks: Python, HTML, CSS, JS, Tensorflow, Pytorch, PostgreSQL, MySQL, Django, Big Query, DBeaver, Vertex AI, Sagemaker AWS

Articles

- **Iphone 12 vs Xiaomi 11 Sales** is an article I wrote about sales comparison between Iphone 12 and Xiaomi 11 in tokopedia. Tokopedia is famous ecommerce in Indonesia.
- **My Gopay Transaction Behavior** is an article I wrote about my analysis about my gopay transaction behavior. Gopay is famous e-wallet in Indonesia, integrated with Gojek.