

# Muhammad Ryanrahmadifa

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## Summary

Experienced on working cross-functionally as a Business Intelligence & Analytics intern for Asia's giant Aquaculture technology startup, eFishery. Actively studying resources online regarding machine learning, looking forward to work on projects on the subject of computer vision, natural language processing, and other deep learning concepts. Experienced at working on data analytics, data science, and deep learning projects such as action recognition, image generation, and credit risk prediction. Actively reading scientific papers on machine learning and deep learning following the interest in industrial implementations of the field. Excited to contribute by assisting research projects to achieve state-of-the-art data-driven decision making implementations for industries in Indonesia, while looking at applications of machine learning from a systems engineering perspective to maximize effectivity and efficiency.

## Education

### Institut Teknologi Bandung

Cirebon

Industrial Engineering

Aug. 2021 - Present

- Maintained 3.31 GPA
- Chosen to be one of 5 students as an interviewee for IABEE Accreditation Program
- Laboratory assistant for Laboratory of Information System and Decision (LSIK) ITB

## Work & Professional Experience

### IDX Partners x Rakamin Academy

DKI Jakarta

Project-Based Virtual Intern : Data Scientist

Jul. 2023 - Aug. 2023

- Conducted the business understanding process towards the credit card & payment industry, followed by exploratory data analysis
- Performed machine learning modelling and evaluation with Random Forest Classification, K-Nearest Neighbor, Gradient Boosting, Naive Bayes, and Artificial Neural Network (ANN) algorithms.

### eFishery

Bandung

Business Intelligence & Analytics

Sep. 2022 - Dec. 2022

- Designed, delivered, and maintained dashboards towards important metrics for the product team daily through Metabase
- Created ERD for company's production database, and conducted SQL querying in order to answer key business questions, successfully implemented complex yet simplified queries that resulted in 10x faster load time
- Performed data extraction, transformation, and loading for the data pipeline that included AppSheet API, Google Sheets, and Metabase
- Maintained an intense communication cross-functionally with other departments to deliver ad hoc requests timely

### DQLab

DKI Jakarta

TETRIS Program Scholarship Awardee

Jul. 2022 - Sep. 2022

- Partook in the data analytics fast track bootcamp as one of the 149 chosen from 8977 individuals (Top 1.6%)
- Successfully implemented advanced usage of MySQL for Data Processing and Cleaning
- Used Python to perform descriptive analytics: web scraping using BeautifulSoup and Selenium; data processing and cleaning using pandas; visualizations using matplotlib and plotly; and deployed the analytics report as an interactive website with streamlit
- Performed machine learning in the form of sentiment analysis from twitter API towards the top 4 social medias

## Personal Projects

### Action Recognition

Computer Vision

- Mapped a set of landmarks consisting of 30 frames of movement for eight different actions. Used mediapipe for the tracking motions of palm joints, the landmarks were converted into NumPy arrays which will be used for training the model.
- Built a model using Tensorflow, based on Long short-term memory (LSTM) layers with ReLU activation functions and dense layers with a softmax activation function on the last layer for mapping the last 30 frames of data gathered to one of eight actions.
- Accuracy tests using confusion matrix stated that the model had 95% accuracy when trained on and given 30 frames of data for every prediction.
- Integrated the model with OpenCV and PyAutoGUI which enables enabling/disabling mouse cursor movement controls using action recognition and landmark tracking which translates the index finger joint to mouse cursor movements

### Face Verification

Computer Vision

- Using the LFW dataset containing 13000 face photographs, built a face verification system with Tensorflow based on the model proposed in the paper "FaceNet: A Unified Embedding for Face Recognition and Clustering" by researchers from Google Inc.
- Implemented a sequence of inception layers consisting of three 2D convolutional layers each, all of which are based on the model proposed from the paper
- Implemented a model trained on personal face photographs to a camera using OpenCV and tested real-time face verification with 100% precision and 80% recall.

### Image Generation

General Adversarial Networks

- Using an open dataset containing 202,599 face photographs of celebrities, built an image generation model using Wasserstein General Adversarial Network (WGAN) based on the model proposed in the paper "Wasserstein GAN" with gradient penalty
- With PyTorch, made custom layers for the discriminator module and generator module
- Using Tensorboard, successfully visualized the training process and image generation results with a 0.6150 discriminator loss and 1.2109 generator loss values.

## Automated Market Research System

Natural Language Processing

- Made as a submission for the Industrial Engineering Competition (IECOM) 2023 essay competition with the topic of researching the market for Electric Vehicles (EVs) on Mobility as a Service (MaaS) in Indonesia
- Performed web scraping towards Google News and Google Play Store review data from the web by Selenium and BeautifulSoup followed by machine translation with deep-translator for translating data based on Bahasa Indonesia to English
- Topic modelling with BERTopic towards Google News and Google Play Store review data to extract the main ideas of both data
- Performed sentiment analysis with BERT for gauging receptiveness from the government and the large public towards EVs and did idea generation through GPT-3.5 subject to all the previous data for contextual alternatives on business strategies for MaaS.

## Organizational Experience

### Kabinet Keluarga Mahasiswa ITB

Bandung

Organizational Infrastructure Development

Feb. 2022 - May. 2022

- Acted as person in charge for interns and successfully led the team on publishing a writing on learning organization
- Wrote a consulting journal on the topic of sense of belonging, backed with analyses via frameworks such as 5 Whys and Fishbone Diagram
- Successfully consulted numerous organizations by setting up action plans and risk management on the solutions provided

### BPA Fakultas Teknologi Industri ITB

Bandung

Operations Supervisor

Jul. 2022 - Nov. 2022

- Built the organization's workflow based on bureaucracy from the ground-up to implement in everyday work, actively evaluating and accepting constructive criticism to further perfect said workflow
- Acted as an advisor for any member of the organization that are experiencing work-related problems

## Certifications & Awards

Jun. 2022	<b>Semi-Finalist of Gadjah Mada Business Case Competition 2022</b> , UGM
Aug. 2022	<b>Google Data Analytics Professional Certification</b> , Google   Coursera
Aug. 2022	<b>Bronze Medalist of HackBiz (Hackathon x Business Case Competition) 2022</b> , UGM
Oct. 2022	<b>Top Achiever of Data Analytics TETRIS Program</b> , DQLab
Dec. 2022	<b>Machine Learning Specialization</b> , Deeplearning.AI   Stanford University   Coursera
Mar. 2023	<b>Deep Learning Specialization</b> , Deeplearning.AI   Coursera
Jun. 2023	<b>Machine Learning Operations (MLOps) Specialization</b> , Deeplearning.AI   Coursera
Jul. 2023	<b>Advanced Google Data Analytics Professional Certification</b> , Google   Coursera

## Skills

- Structured Query Language (SQL)
- Python Programming
- R Programming
- Database Modelling
- Exploratory Data Analysis
- Data Cleaning & Preparation
- Machine Learning
- Deep Learning