

## Summary

Bachelor of Science in Geodesy and Geomatics Engineering with over 6 years of experience in the data industry. Strong passion for spatial science and data science, demonstrated by maintaining a personal blog on the subject. Proven leadership skills and a commitment to knowledge sharing through active volunteering as a data science mentor.

## Professional Experience

### ESRI Indonesia (GIS Software & Services)

Jakarta, Indonesia

#### Data Scientist

January 2023 – present

Esri Indonesia provides GIS solutions and services to various industries in Indonesia, including local and national government, natural resources, utilities, transportation, telecommunications, and commercial.

- **Palm Tree Counting:** Led a palm tree counting project, overseeing data labeling of over 7000 data points on drone imageries, consulting with the reporting, and utilizing ArcGIS Pro for data preparation. Trained a deep learning model and managed performance analysis, resulting in an exceptional 95% mean Average Precision (mAP).
- **Road Damage Detection:** created a data engineering pipeline to convert ~16k raw images and labels data from multiple sources to ready-to-train data. Trained a deep learning model using YOLOv8 and achieved a precision-recall score of 0.635 across all 4 classes.
- **GIS-Based Market Development:** collaborated with the solution team to develop a dashboard able to showcase current market presence and potential leads. Created a custom data processing pipeline capable of handling 193 million records, reducing manual process time by 72%. Applied a statistical method to classify ~300 top priority leads out of 4000 prospects
- **PM2.5 Forecasting:** developed a deep learning time-series forecasting pipeline to forecast the next 48 hours of PM2.5 trends. Designed >80 experiment combinations and used MLflow and Dagshub to monitor the result. The best model achieved RMSE of ~7.14.

### Zenius Education (Ed-Tech)

Jakarta, Indonesia

#### Business Intelligence Analyst

December 2021 - July 2022

Zenius is a well-known ed-tech company pioneer focused on increasing thinking capacity and building foundational thinking for junior and senior high school student to help them excel in their school.

- **Workflow management:** structured a system to increase workflow transparency and accountability. Increased the ability to manage and monitor ad hoc and internal tasks/projects from 0 to 16+ tasks/projects weekly.
- **Dashboard:** created 3 dashboards with Google Data Studio for growth, finance, and content teams with over 50 metrics ranging from operational to C-level granularity.

### Gojek (Q-commerce and Financial Services)

Jakarta, Indonesia

#### Junior Risk Data Analyst ⇒ Risk Data Analyst

April 2019 - December 2021

GoTo's ecosystem comprises of on-demand transport, e-commerce, food, and grocery delivery, logistics and fulfillment, and financial services through the Gojek, Tokopedia and GoTo Financial platforms.

- **Fraud analysis:** analyzed up to 1000 GPS movements daily to determine fraudulent patterns for constructing fraud rules of fourwheels and two-wheel platforms.
- **Rule deployment:** prevented new modus operandi from exploiting a GPS related-loophole in the production apps. Fraudsters abused this loophole for financial gain and reputation hijack. Reduced the number of case significantly from 400 to 10 cases daily, with a false positive rate under 1% within a month.
- **Rule enhancement:** analyzed the hypothesis made fraud my team then enhanced the rule by applying a more sophisticated method of fraud identification (relational graph logic) to detect the convoluted device connection/relation. Increased the detection rate by 50%.

## Project

### Land Cover Segmentation

(Rasterio, RioXarray, Sklearn)

- Used random forest classification to classify land cover from Sentinel-2 imagery
- The model achieved accuracy of 97%

### Palm Tree Detection

(PyTorch)

- Identify palm trees in aerial imagery captured by drones
- Implemented pre-processing techniques for drone imagery and developed a custom training data processing pipeline
- Fine-tuned the Mask R-CNN model to achieve robust performance.

## Skills and Tech Stack

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- **Machine Learning, Deep Learning, MLOps:** PyTorch, YOLO, XGBoost, MLFlow, Optuna, DVC , [scikit-learn](#), [statsmodel](#) , TensorFlow, Darts
- **Data Science:** VSCode, GeoPandas, Apache-Sedona, polars, duckdb, BigQuery SQL, ArcGIS Pro , Neo4j, Cypher
- **Others:** Git, GitHub , [Gradio](#) , [HuggingFace](#), Azure, AWS
- **Relevant coursework:** computer vision (image classification, object detection), spatial analysis, time series forecasting, clustering, classification
- **Languages:** Bahasa Indonesia (Native), English (CEFR Level C1/IELTS 7.5).

## Achievement

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- **ESRI ArcGIS Pro Associate:** proof of experience in applying ArcGIS concepts and processes to workflows. Demonstrated proficiency using ArcGIS to manage, analyze, and manipulate geospatial data. [[Certificate](#)]
- **Neo4j Certified Professional:** official professional certification from Neo4j. [[Certificate](#)]
- **Panelist - ASEAN Geospatial Challenge:** a national level competition on geospatial solution and innovation. Involved as a panel in evaluating top 10 submissions. [[Certificate](#)]

## Education

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### MIT IDSS: Data Science and Machine Learning

Remote

*An online professional course taught by the MIT faculty*

*August - November 2022*

Topic covered: statistics, unsupervised and supervised learning, hypothesis testing, deep learning, recommendation system, network and graphical model, and predictive analysis.

### Institut Teknologi Bandung

Bandung, Indonesia

*B.Sc in Geodesy and Geomatics Engineering, GPA 3.21/4.00.*

*July 2014 - October 2018*

Topic covered includes: calculus, statistics, GIS, satellite geodesy, remote sensing, spatial database, cartography.

## Leadership/Voluntary Experience

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### RevoU x MSIB

Remote

*Mentor*

*February - April 2024*

RevoU is Indonesia's Largest Professional Skilling Platform. MSIB is a comprehensive career preparation program initiated by ministry of education and culture.

- **Mentorship:** lorem ipsum

### Yayasan Anak Bangsa Bisa (YABB)

Jakarta, Indonesia

*Mentor/Instructor - Generasi Gigih*

*July - December 2021*

Yayasan Anak Bangsa Bisa (YABB) is a non-profit organization founded by Gojek, a catalyst that enables resilient change makers to solve pressing challenges and build sustainable communities. Generasi Gigih programme focuses on generating tech-talent by conducting an intensive boot camp to prepare fresh graduates for the tech industry.

- **Designed, created, and lectured:** data analysis lecture materials (Python and SQL for data analysis).
- **Mentorship:** guide and mentor the participants during their internship. Ensured the participants gained the most during their internship while maintaining the focus on the projects they were working on.

### Ikatan Mahasiswa Geodesi ITB (IMG-ITB)

Bandung, Indonesia

*Chairman of IMG-ITB (Executive Student Council)*

*August 2017 - March 2018*

Ikatan Mahasiswa Geodesi ITB (IMG-ITB) is a profession-based student association.

- **Visioning:** designed a blueprint as the north star metrics of the association. Mainly focus on character and mindset development in a professional manner and making a concrete social impact.
- **Executive function:** managed a council consisting of 5 ministries and 15 departments to maintain and develop the student association.

## Miscellaneous

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- **Topic:** education, environment, game industry, movie, leisure.
- **Book:** history, sociology, biography, religion, psychology.
- **Activity:** SCUBA diving, hiking, gym, PC game, writing.