Reza Dwi Utomo Data & ML Scientist/Engineer

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Profile

As an engineer with a focus on data-driven analysis, I have 6 years of diverse experience, including independent research in intelligent control, machine learning, and reliability in manufacturing, where the industries are railway research, manufacturing, telecommunication, legal, e-commerce, and IT consultant. I work currently as a Lead Staff / Senior Engineer Specialist in Data Analytics at Mastersystem Infotama, a leader in ICT System Integrator.

I am highly interested in the application of AI and technology, particularly in areas such as intelligent transport systems, natural language processing, computer vision, big data, data science, and other intelligent applications. I am skilled in analytical programming languages such as Python, MATLAB, and R, and am proficient in the AWS and GCP cloud environments. I hold several data science and machine learning certificates from Udacity, deeplearning.ai, Microsoft, and IBM.

Skills

Python (NumPy, Pandas, Scikit-learn, Matplotlib, Plotly, Dash, etc.), **Deep Learning** (Keras, TensorFlow, PyTorch),
NLP (NLTK, SpaCy, Gensim, FastText, Hugging Face), **Linux Bash**, **R** (dplyr, ggplot, flexdashboard, shiny),
GCP (BigQuery, Vertex AI, GCS, GCE), **SQL** (MySQL, MariaDB, SQLite), **NoSQL** (Elasticsearch), **Git** (GitHub, GitLab),
MLOps (MLflow, DVC), **Social Network Analysis** (Gephi), **Azure** (Azure Machine Learning), **MATLAB** (Simulink),
Data Engineering (PySpark), **Deployment** (Flask, FastAPI, Docker), **CI/CD** (Pylint, Isort, Black, Pytest, Pre-commit, Jenkins),
AWS (SageMaker, S3, EC2, API Gateway, Textract, Rekognition, Glue, Athena, Lambda, Step Functions, RDS, EventBridge, CloudWatch, SNS, SES)

Latest Experience

Lead Staff / Senior Engineer Specialist in Data Analytics, Jan 2023 — present | Jakarta
PT Mastersystem Infotama 🔗
- Using AWS services to solve clients' requirements
- Developing ETL pipeline for data migration from the on-premise server to AWS
- Developing ETL pipeline for daily data processing
- Developing ETL pipeline for data validation check
- Allocating human resources to various projects based on the project's assessment

Senior Data Scientist, *PT Tokopedia* 🔗 Oct 2022 — Dec 2022 | Jakarta
- Worked as the PIC of Data Science for shop recommendations.
- Developed complex recommendation systems for online sellers through various merchant campaign tools.
- Analysed hundreds of millions of data points on products and shops.
- Collaborated with other teams and stakeholders to develop new features.

Head of Legal Data Analytics, Jan 2022 — Sep 2022 | Jakarta
Legal Analytics (Powered by Telkom Indonesia) 🔗
- Assisted governmental and corporate organizations in implementing Big Data and AI-based solutions in the legal, law, and social sectors.
- Translated user or management-level requirements into Big Data and AI solutions.
- Successfully delivered solutions worth billions of rupiah for various projects.
- Managed a team of approximately 10 data scientists to develop and deliver Big Data and AI solutions.
- Created a budget plan for the company's big data analytics plan.

Data Scientist, *PT Telkom Indonesia (Persero), Tbk.* 🔗 Oct 2020 — Sep 2022 | Jakarta
- Applied various Big Data and AI approaches to deliver analytics solutions for projects worth tens of billions of rupiah per client.
- Successfully reduced the processing time of a client's single task from hours to less than 30 minutes.
- Delivered solutions to 2 or more clients per quarter.
- Collaborated with 5+ colleagues to establish our team as a digital company (legalnalytics.id).
- Delivered Big Data and AI solutions for hundreds of millions of various text-based data.
- Developed a Big Data and AI system serving 2000+ governmental institutions, nearly 10 thousand organisations, and all Indonesian citizens (200+ million people).

Data Scientist, *CODEX (Powered by Telkom Indonesia)* 🔗 Apr 2020 — Sep 2020 | Jakarta
- Worked with a team of 5+ Data Scientists to deliver Big Data and AI solutions for a project worth billions of rupiah.
- Participated in a data science team working on a Natural Language Processing project for Text Similarity in law.
- Analysed millions of COVID-19 case data on the PeduliLindungi App 🔗 .
- Implemented Anomaly Detection on hundreds of thousands of data in a big data analytics project.

Engineer, *PT Industri Kereta Api (Persero)* 🔗   Feb 2019 — Dec 2019 | Madiun
- Conducted statistics-based (e.g. descriptive, inferential, regression) reliability prediction analysis on various projects worth hundreds of billions of rupiah each.
- Developed a RAMS analysis (Reliability, Availability, Maintainability and Safety) concept specifically for the company's rolling stock system.
- As the main contributor to the development of the RAMS management process at the company.
- Conducted RAMS management based on industry standards.

Junior Expert,   May 2018 — Jan 2019 | South Tangerang
Agency for the Assessment and Application of Technology (BPPT) 🔗
- Conducted statistics-based (e.g. descriptive, inferential, regression) reliability prediction analysis on a project worth a trillion rupiah.
- Worked with a team of 10+ engineers to deliver prediction analysis for the project.
- Developed FTA (Fault Tree Analysis) in R.
- Conducted RAMS analysis for the systems of the doors, HVAC, bogie, wiring and piping connections, and control panels of the rolling stocks.

Education

MRes in Railway Systems Integration, *University of Birmingham* 🔗   Aug 2016 — Sep 2018 | Birmingham, UK
- Core modules: Mathematics as an Engineering Tool, Railway Operations and Control Systems, Railway Traction Systems Design, Railway Control Systems Engineering, Research Skills and Research Environment.
- Thesis topic: Development of ATO (Automatic Train Operation) Control Systems with Kalman filter (developed in MATLAB) using a case study of the Docklands Light Railway in London. Part of the thesis was presented at the IEEE International Conference on Intelligent Rail Transportation (ICIRT) December 2018 🔗 in Singapore and published on IEEExplore 🔗 .

BEng in Computer Engineering, *Diponegoro University* 🔗   Sep 2010 — Aug 2015 | Semarang
- Core modules: artificial intelligence, fuzzy logic, neural networks, real-time operating system (RTOS), microprocessor design, embedded system, and distributed embedded system.
- Final project topic: Development of a fuzzy logic controller (developed in MATLAB/Simulink) to control the transfer function of a train, published 🔗 in IEEE Conference Proceedings 🔗 .

Latest Courses

Introduction to Machine Learning in Production, *deeplearning.ai*   Jun 2022 — Jul 2022
The student will identify the various components and design an ML production system end-to-end: project scoping, data needs, modelling strategies, and deployment constraints and requirements; and learn how to establish a model baseline, address concept drift, and prototype the process for developing, deploying, and continuously improving a productionised ML application.

Introduction to Kubernetes, *The Linux Foundation (edX)* 🔗   Jan 2022 — Apr 2022
This course offers an introduction to Kubernetes and includes technical instructions on how to deploy a stand-alone and multi-tier application. You'll learn about ConfigMaps and Secrets, and how to use Ingress.

Data Scientist Nanodegree, *Udacity* 🔗   Aug 2021 — Dec 2021
The student will master the skills necessary to become a successful Data Scientist. He will work on projects designed by industry experts, and learn to run data pipelines, design experiments, build recommendation systems, and deploy solutions to the cloud.

Natural Language Processing Specialization, *deeplearning.ai* 🔗   Mar 2021 — Jul 2021
The student will be ready to design various NLP applications. This Specialization is designed and taught by two experts: Younes Bensouda Mourri (an Instructor of AI at Stanford University) and Łukasz Kaiser (a Staff Research Scientist at Google Brain and the co-author of Tensorflow, the Tensor2Tensor and Trax libraries, and the Transformer paper).

TensorFlow Developer Professional Certificate, *deeplearning.ai* 🔗   Dec 2020 — Jan 2021
The student will learn the necessary tools to build scalable AI-powered applications with TensorFlow. After finishing this program, he will be able to apply his new TensorFlow skills to a wide range of problems and projects. This program can help you prepare for the Google TensorFlow Certificate exam and bring you one step closer to achieving the Google TensorFlow Certificate.

Deep Learning Specialization, *deeplearning.ai* 🔗   Sep 2020 — Dec 2020
The student will build and train neural network architectures such as Convolutional Neural Networks, Recurrent Neural Networks, LSTMs, Transformers, and learn how to make them better with strategies such as Dropout, BatchNorm, Xavier/He initialization, and more.

IBM Data Science Professional Certificate, *Coursera* 🔗   Nov 2019 — May 2020
The program consists of 9 online courses that will provide the student with the latest job-ready tools and skills, including open-source tools and libraries, Python, databases, SQL, data visualization, data analysis, statistical analysis, predictive modeling, and machine learning algorithms. He will learn data science through hands-on practice in the IBM Cloud using real data science tools and real-world data sets.