Gian Antariksa, Ph.D.

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OVERVIEW

Over the past seven years, my passion for **Data Science, Machine Learning Operations, Deep Learning, and Solution Architecture** has grown. This interest is backed by experimental research in optimizing business solutions through Data-Driven Technologies by building end-to-end apps. I am confident that my skills and experiences align well with the requirements for the Machine Learning Engineer/Scientist role. Professionally, I have **eight+ years** of diverse experience in the Data Science field, working in roles ranging from employee to consultant and project-based positions. I am enthusiastic about contributing AI works in areas such as **banking, mining, transportation, semiconductor, manufacture, pharmaceuticals, media, and oil & gas**. My academic work is supported by publications in respected journals, highlighting my commitment to the advancement of industrial data science.

EDUCATION

Ph.D. Industrial Data Science and Engineering *2020–2023*
Pusan National University & Pukyong National University Joint Degree (QS <500) CGPA: 4.15/4.50
Dissertation: Geological Interpretation and Prediction for Hydrocarbon Exploration using Machine Learning-Based Approaches
Advisor: Prof. Jihwan Lee | *Courses:* Deep Learning & ML, Reinforcement Learning, Industrial Data Analytics

M.Eng. Engineering Physics *2018–2020*
Pukyong National University, South Korea CGPA: 4.45/4.50
Thesis: Study on Ultraviolet-A of $CaSiO_3$:Ce^{3+} | *Advisor:* Prof. Jong Su Kim
Courses: Thin Film Technology, Powder Technology, Spectroscopy, Electroluminescence

B.Sc. Physics *2012–2016*
Diponegoro University, Indonesia CGPA: 3.33/4.00
Thesis: Porosity and Water Saturation Analysis in the Integration of Petrophysics and Multi-attribute Seismic for Reservoir Characterization | *Advisor:* Prof. Tony Yulianto
Courses: Quantum Physics, Artificial Intelligence, Statistical Physics

WORKING EXPERIENCE

Senior Data Scientist *May 2024 – Present*
PT. Mitra Solusi Telematika, Indonesia

Obtain insights by leveraging machine learning algorithms. Develop orchestrated pipelines for analytical purposes and machine learning training. Stay up to date with the latest research and developments in the machine learning field and apply this where applicable.

Key Projects:

- **L2 SAP Incident Ticket Solutions using AI Agent:** Develop end-to-end serverless architecture AI agent based on AWS cloud using Lambda. Build experimental cases of AI persona and behavior based on the response as an Agent Solver. Evaluation trial and error scenario to solve the issues of incident tickets. **Value:** Cost reduction is almost 2% budget that flows to L2 vendor, which could be solved by AI agent
- **CV Screening for Recruitment & Talent Pooling AI Agent:** Develop end-to-end deployment architecture and mockups. AI Agent works as sorting CV based on the resume capabilities, and Talent Pooling also works as grading the employee suitability score for each promotional candidate. **Value:** Reduce man efforts assessment up to 90%+ for Human Capital managements
- **Product Subscription Routing LLM API:** Develop an experimental routing LLM methodology that suits data governance and data security. Build dispatch tools to route lists of LLM which suits based on the functionality. Create a serverless API for subscription which could be used for customers. **Value:** Reduce cost of LLM almost 60% based on this methodology
- **Serverless Data Platform (AWS):** Develop end-to-end ETL platform for dashboard visualization. All pipelines are maintained on the serverless AWS Cloud. Deep domain understanding for several dashboards' dataset (Finance, Mining, IoT Sensor). **Value:** Business Process and Management Decision more precise based on dashboard data

Postdoctoral Research Fellow *Jan 2024 – May 2024*
Artificial Intelligence in Transportation, Texas State University, USA

Lead AI technology development for data-driven solutions for safety transportation.

Research Projects: (All funded by NHCRP & TXST)

- **AutoML with Explainable AI for Enhancing Prediction of Pedestrian Crash Severity:** Data-driven approach to the prediction of pedestrian crash severity, this research combines explainable AI techniques with AutoML.

Develop the experimental stacks and the project reporting based on the proposal phase. **Output:** Journal publication. **Value:** Optimizing the investigation of crashes in the pedestrian based on the explainable AI report

- **Predicting Pedestrian-Involved Crash Severity using Image Classification based on Tabular to Image:** Tabular to Image approach to the prediction of the pedestrian crash severity. To optimize the process based on the tabular data crashes report. Develop the experimental stacks and the project reporting based on the proposal phase. **Value:** Reliable and fast prediction to generate severity result compared to the conventional analysis
- **Topic Modeling using BERTopic with LLAMA Integration on Crash Narratives:** This research employs advanced LLMs to analyze narrative reports of SUV-bicycle crashes. Aiming to uncover key insights into the causes, patterns, and potential preventive measures. Develop the experimental stacks and the project reporting based on the proposal phase. **Value:** Generate cluster information from the crash severity investigation using BERTopic
- **Exploring Advanced Topic Modelling: BERTopic with LLAMA Integration in Analyzing Marijuana-related Crashes:** This research tackles the pressing issue of enhancing transportation safety, with a special emphasis on marijuana involved crashes. Develop the experimental stacks and the project reporting based on the proposal phase. **Value:** Generate cluster information and benchmarking from the crash severity investigation using BERTopic

AI Engineer *Sept 2023 – Jan 2024*
INEEJI, South Korea

Develop new algorithm and research end to end AI products apps with new data-driven solutions for various industries.
Key Project:

- **INFINITE OPTIMAL SERIES™ (Industrial Process Efficiency Optimization XAI Solution):** Develop a Deep Learning based Anomaly Detection (USAD, and Anomaly Transformers) with the advanced level Explainable AI (Kernel SHAP, Integrated Gradient, LIME, Saliency Maps, Deep Lift). Develop AutoML with automatic preprocessing, feature engineering, and automatic hyperparameters tuning. Build software architectures end-to-end, start from ingest raw API for stagging database using SQL query, deploy all machine learning models in the apps, until generate the API to the front-end developer. Build cloud base deployment using Google Cloud Platform, deploy high-performance-computing (CUDA) to perform multi-process user. **Value:** The feature is new technologies that could sell separately from the main product as subscription. This apps already sold to several companies in South Korea and abroad (Japan), to optimize business process

Product Data Science Specialist (Remote) *Aug 2021 – May 2024*
PT. Cybertrend Intrabuana, Indonesia

Develop and research end to end AI products apps with new data-driven solutions for various industries.
Product Suite: (All solutions sold to companies across Indonesia & Southeast Asia)

- **CtrendVision™ for Retail (Customer Segmentation and Data Analytics):** Develop dashboard library Recency, Frequency, and Monetary based on Plotly python based as feature in the apps. Develop Customer Segmentation using Unsupervised Learning with advance automated cluster evaluation. Develop Forecasting in long period (Prophet) and short period (LSTM, GRU, BiLSTM, and Transformers model), deep learning model with automatic hyperparameters. **Value:** Increase profit from all Small Medium Enterprises based on business plan during corona period
- **CtrendMax™ for Manufacturing (Real Time Anomaly Detection XAI Tools):** Develop dashboard library for sensor monitoring based on Plotly python based as feature in the apps. Develop real-time anomaly detection (Unsupervised Learning) with explainable AI (SHAP). Develop data analytics for failure process in manufacture process, with accurate explainability. **Value:** Reduce cost of maintenance due to false engine failure and get real-time condition XAI of failure
- **CtrendMax™ for Banking (Credit and Churn Scoring):** Develop a credit scoring based on deep learning (ANN) in order to classify the person who will get credit or rejected. Develop a churn prediction based on AutoML in order to classify the high loyalty customer. **Value:** Time reduced and cost effectiveness for customer due diligent for credit scoring
- **CtrendMax™ for Aero Transportation (Forecasting):** Develop method for data staging using SQL query for data warehousing. Develop Forecasting in long period (Prophet) and short period (LSTM, GRU, BiLSTM, and Transformers model), deep learning model with automatic hyperparameters. **Value:** Cost effectiveness due to reliable planning based on forecasting in short term and long term
- **CtrendMax™ for Car Rental (Predictive Maintenance):** Develop use cases together with the presales for new car rental industry, making proposal and tender preparation. Develop predictive maintenance using survival-analytics based Kaplan-Meier, to get lifetime of each car rental. Develop elastic price car parts estimation based on technical analysis. **Value:** Reduce cost for maintenance of car service due to reliable maintenance planning
- **CtrendMax™ for Car Exhibition (Attendant Analytics):** Develop a churn prediction based on AutoML in order to classify the high loyalty customer. Develop an explainable AI analysis based on the churn, in order to know the customer that high potential buyer. Develop a full dashboard using Plotly in cloud based using Amazon Web Services (EC2). **Value:** Generate profit for sales from Hot Leads costumer when exhibition on going
- **CtrendMax™ for Marketing (Sentiment Analytics):** Develop scraping tools from multiple sources using BeautifulSoup, mostly social media (twitter, google, news). Develop preprocessing the scraped dataset, and deep learning model for classifying the sentiment to get insight of the main topic that highly discussed in the real-time. Work together with Business Intelligence to generate develop the dashboard that needed depends on the client. **Value:** Cost optimization for campaign and promotion due to reliable planning from diagnostic analysis

- **CtrendMax™ for Logistics (Route Optimizer):** Develop high optimized fast route calculation daily based using OSRM, based on the performance of cost. Develop feature engineering of the business process based on the performance of all outlets and salesman. **Value:** Generate profit and cost optimization from the high-performance outlet based optimized route
- **CybertrendGPT™ for Generative AI ChatBot:** Develop architecture of LLM model, from vectorDB, embedding text, tokenizer, and choosing LLM Model from hugging face and perform transfer-learning. Develop end-to-end architecture of this ChatBot from uploading all database to vectorDB, get similarity from the query prompts, and get QnA contex, until generate the ChatBot API. **Value:** Business process optimization from and cost optimization for customer care division

AI Scientist and Developer *Sept 2020 – Aug 2023*

Business Analytics Laboratory, Pukyong National University, South Korea Research new

Machine Learning Algorithm solutions for various industries and assist graduate students to perform research related to the industrial data science area.

Research Projects: (All funded by NRF Korean Government)

- **Explainable Anomaly Detection Framework for Maritime Main Engine Sensor Data:** Data-driven approach to the condition monitoring of the marine engine, this research combines explainable AI techniques with anomaly detection algorithm in specific area of maritime vessel sensor. **Output:** Journal publication. **Value:** Reduce cost of maintenance due to false engine failure and get real-time condition XAI of failure
- **Performance Evaluation of ML-based Classification in Tarakan Basin, Indonesia:** Develop a supervised learning method for automatically classifying lithofacies well-logging dataset, where several ML algorithm was compared in this study in the Tarakan Basin, Indonesia. **Output:** Journal publication. **Value:** Time effectiveness and cost optimization for facies classification method in upstream
- **Deep Sequence Model-Based Approach to Well Log Data Imputation:** Novel research study on well log data imputation method for the West Natuna Basin in Indonesia, using time-series deep learning models. **Output:** Journal publication. **Value:** Cost reduction and optimization by cutting budget for exploration due to data usage
- **Enhanced Seismic Denoising with Self-Supervised Deep Convolutional and SHAP XAI:** Developing an innovative self-supervised strategy for seismic noise reduction using Deep Convolutional Denoising (DCD) based on the Explainable AI generated information. **Output:** Journal publication. **Value:** Cost reduction for optimal denoising method for exploration due to data usage
- **HPC CloudBoost: Multi-User Cloud Services Enhancement:** Upgrading our server infrastructure to offer HPC-powered services for multi-user cloud environments. This enhancement focuses on leveraging high-performance computing to support simultaneous operations, significantly boosting efficiency and scalability for all users. **Value:** Reduce cost of computation usage by create cloud computing for laboratory infrastructure

Data Scientist *Feb 2021 – Feb 2023*

Daewoong Pharmaceuticals, South Korea

Develop artificial intelligence end to end apps specific to the pharmaceuticals industry, with target of reducing cost and optimization whole industrial process.

Key Projects:

- **Energy Consumption Prediction: Optimizing Air Handling Systems:** Develop various deep learning methods in order to predict the energy consumption. Develop automatic trigger for Air Handling Systems based on the energy consumption prediction. Develop an end-to-end application and report to the head developer for deployment. **Value:** Cost optimization improvement based on the optimized prediction of the energy consumption
- **Automatic Drug Discovery for Cost-Effective Drug Fabrication:** Develop methodology using deep learning based to develop a processing architecture for systematic ingredient of drug, treatment of drug creation, and post treatment of the drug development. Peer to peer discussion with the Pharmacy's Subject Matter Expert to develop prediction output. **Value:** Reduce cost for drug discovery development due to reach target optimized drug
- **Anomaly Detection in Air Conditioning Systems:** Develop an anomaly detection (Unsupervised) approach to the condition monitoring of the Air Conditioning system, this project combines with explainable AI techniques algorithm. Develop databased warehouse using mySQL query staging database from the real-time sensor. Develop dashboard for monitoring visualization, in order to understand the anomaly condition. **Value:** Reduce cost of maintenance due to false engine failure and get real-time condition XAI of failure

Semiconductor Researcher *Aug 2018 – Aug 2020*

Inorganic Semiconductor Laboratory, Pukyong National University, South Korea

Conduct technical such as synthesizing, fabricating, and measuring semiconductor devices and understanding economic feasibility studies to support research and development projects.

Research Projects: (All funded by NRF Korean Government, published in journals)

- **Blue-green tunable electroluminescence from Y_2SiO_5:Tb^{3+} phosphor:** Develop unique tunable optical Powder-based electroluminescence from color range blue to green. This experiment material was changing the doping of Tb^{3+} from Y_2SiO_5. **Value:** Develop semiconductor tunable color for heat sensor based on phosphor
- **White electroluminescence from Ce^{3+}-doped bi-phase calcium silicate:** Develop UV radiation lighting for water disinfection based on thin film for water purification. This device was developed from thin film semiconductor

from $CaSiO_3$:Ce^{3+}. **Value:** Develop thin film semiconductor nano scale for water purification

- **White EL from $CaSiO_3$:Tb^{3+}:** Develop advanced white color electroluminescence on thin film semiconductors. This device has developed first time in the world using $CaSiO_3$:Tb^{3+}. **Value:** Advanced white color of the thin film semiconductor
- **Ultraviolet-A EL from polymorphic $CaSiO_3$:Ce^{3+}:** Develop unique polymorphic of $CaSiO_3$:Ce^{3+} based on electrolyte activator. This device could generate ultraviolet for water purification. **Value:** Develop thin film semiconductor based on electrolyte nano scale for water purification

Competency Engineer *Jan 2018 – Jun 2018*
Medco E&P Natuna, Indonesia
Responsible to managed production, manpower performance analysis, and schedule optimization for projects.

Relationship Manager *Jan 2017 – Nov 2017*
Commonwealth Bank, Indonesia
Specialized in credit analysis, financial consulting, asset management, developed tailored strategies and ensured effective risk management while meeting the bank's asset quality and policy requirements.

FULL STACK AI DATA SCIENTIST SKILLSETS

Core Machine Learning & Deep Learning Foundations: TensorFlow, PyTorch, PyTorch Lightning, scikit-learn, XGBoost, LightGBM, CatBoost, Keras, FastAI, JAX, NumPy, Pandas, SciPy, StatsModels
Advanced Deep Learning & Scientific ML: Physics-Informed Neural Networks (PINNs), Neural Operators (FNO, DeepONet), Graph Neural Networks (PyTorch Geometric, DGL), Diffusion Models, Variational Autoencoders, Generative Adversarial Networks, Meta-Learning, Few-Shot Learning, Transfer Learning, Domain Adaptation
Large Language Models & Generative AI: GPT-4, Claude, Gemini, LLaMA, Mistral, Azure OpenAI, Amazon Bedrock, Ollama, Retrieval Augmented Generation (RAG), Vector Databases (Pinecone, Weaviate, Chroma, Qdrant, FAISS), Agentic AI Frameworks, Chain-of-Thought Prompting, Fine-tuning (LoRA, QLoRA), Instruction Tuning, RLHF, LangChain, LlamaIndex, Semantic Kernel
Natural Language Processing: Transformers (BERT, RoBERTa, T5, GPT), Hugging Face Ecosystem, Sentence Transformers, spaCy, NLTK, Gensim, Named Entity Recognition, Sentiment Analysis, Text Classification, Information Extraction, Question Answering Systems
Computer Vision & Multimodal AI: YOLO (v5-v11), Detectron2, MMDetection, Segment Anything Model (SAM), OpenCV, Albumentations, CLIP, Vision Transformers (ViT), Object Detection, Semantic Segmentation, Instance Segmentation, Image Generation (Stable Diffusion, DALL-E), 3D Vision, OCR (Tesseract, EasyOCR, PaddleOCR)
Reinforcement Learning: OpenAI Gym, Stable Baselines3, Ray RLlib, Deep Q-Networks (DQN), Proximal Policy Optimization (PPO), Actor-Critic Methods, Multi-Agent RL, Model-Based RL
Explainable AI (XAI): SHAP, LIME, Integrated Gradients, Attention Visualization, Saliency Maps, Counterfactual Explanations, Model Interpretability Frameworks
High Performance & Distributed Computing: CUDA, cuDNN, TensorRT, NVIDIA Triton, OpenMP, Intel oneAPI, Dask, Ray, Distributed Training, Model Parallelism, Data Parallelism, Mixed Precision Training (AMP)
MLOps & Production Systems: MLflow, Weights & Biases, Neptune.ai, Kubeflow, MLServer, Model Monitoring, A/B Testing, Model Versioning, CI/CD for ML, Model Serving (FastAPI, TorchServe, TensorFlow Serving)
Data Engineering & Big Data: Apache Spark (PySpark), Apache Kafka, Apache Flink, Apache Beam, Apache Airflow, Hadoop (HDFS, MapReduce), Data Lakehouse Architecture, ETL/ELT Pipelines, Data Quality Frameworks (Great Expectations)
Database Systems: PostgreSQL, MySQL, MongoDB, Redis, Elasticsearch, Neo4j, TimescaleDB, ClickHouse, Snowflake, BigQuery, Data Warehousing, OLAP, OLTP
Cloud Platforms & DevOps: AWS (SageMaker, EC2, S3, Lambda, ECS, Bedrock), Google Cloud Platform (Vertex AI, BigQuery, GKE), Azure (Machine Learning, OpenAI Service), Docker, Kubernetes, Terraform, Infrastructure as Code, Serverless Computing
Visualization & Analytics: Plotly, Dash, Streamlit, Gradio, Matplotlib, Seaborn, Bokeh, Altair, Power BI, Tableau, Grafana, Metabase, Looker, Interactive Dashboards, Real-time Analytics
Research & Scientific Computing: Jupyter, Google Colab, Weights & Biases Reports, LaTeX, Research Paper Implementation, Reproducible Research, Experiment Design, Statistical Analysis, Hypothesis Testing, Bayesian Methods

PEER REVIEW PUBLICATIONS

- Automated and Explainable Artificial Intelligence to Enhance Prediction of Pedestrian Injury Severity, G. Antariksa, R. Tamakloe, J. Liu, S. Das, *IEEE Transactions on Intelligent Transportation Systems.* (https://doi.org/10.1109/TITS.2025.35262 **2025**
- Comparative Analysis of Advanced AI-based Object Detection Models for Pavement Marking Quality Assessment during Daytime, G. Antariksa, R. Chakraborty, S. Somvanshi, S. Das, M. Jalayer, D.R. Patel, et al., *arXiv preprint arXiv:2503.11008.* **2025**
- Revealing equity gaps in pedestrian crash data through explainable artificial intelligence clustering, J. Liu, G. Antariksa, S. Somvanshi, S. Das, *Transportation Research Part D: Transport and Environment.* (https://doi.org/10.1016/j.trd.2024.104538)

2025

- XAI-driven contamination for self-supervised denoising with pixel-level anomaly detection in seismic data, G. Antariksa, A. Koeshidayatullah, S. Das, J. Lee, *Journal of Applied Geophysics.* (https://doi.org/10.1016/j.jappgeo.2025.105723) **2025**
- A survey on deep tabular learning, S. Somvanshi, S. Das, S.A. Javed, G. Antariksa, A. Hossain, *arXiv preprint arXiv:2410.12034.* **2024**
- Enhanced balanced-generative adversarial networks to predict pedestrian injury types, S. Somvanshi, G. Antariksa, S. Das, *Available at SSRN 4847615.* **2024**
- Deep sequence model-based approach to well log data imputation and petrophysical analysis: A case study on the West Natuna Basin, Indonesia, G. Antariksa, R. Muammar, A. Nugraha, J. Lee, *Journal of Applied Geophysics.* (https://doi.org/10.1016/j.jappgeo.2023.105213) **2023**
- White electroluminescence from Ce^{3+}-doped bi-phase calcium silicate in metal-oxide-semiconductor structure, M.M. Afandi, G. Antariksa, J. Kim, *Thin Solid Films.* (https://doi.org/10.1016/j.tsf.2022.139630) **2023**
- Ultraviolet-A electroluminescence from polymorphic $CaSiO_3$:Ce^{3+} in electrolyte-thin film semiconductor, M.M. Afandi, G. Antariksa, T. Kang, J. Kim, *Physica B: Condensed Matter.* **2023**
- Improving Geological Interpretation and Prediction for Hydrocarbon Exploration using ML-Based Approaches, A. Gian, *Ph.D. Thesis, Pukyong National University.* **2023**
- Performance evaluation of machine learning-based classification with rock-physics analysis of geological lithofacies in Tarakan Basin, Indonesia, G. Antariksa, R. Muammar, J. Lee, *Journal of Petroleum Science and Engineering.* (https://doi.org/10.1016/j.petrol.2021.109250) **2022**
- White electroluminescence from cross relaxation-free $CaSiO_3$:Tb^{3+} film on silicon wafer and its concentration dependent white-color tunability, H. Jung, M.M. Afandi, G. Antariksa, J. Park, J. Kim, *Journal of Luminescence.* (https://doi.org/10.1016/j.jlumin.2022.119177) **2022**
- Blue-green tunable electroluminescence from Y_2SiO_5:Tb^{3+} phosphor, M.M. Afandi, G. Antariksa, H. Kang, T. Kang, J. Kim, *Journal of Luminescence.* (https://doi.org/10.1016/j.jlumin.2022.119201) **2022**
- Reconstruction of old well log data using deep learning imputation, G. Antariksa, R. Muammar, A. Nugraha, J. Lee, *Proceedings of the Korean Institute of Industrial Engineers Fall Conference,* 3440-3461 **2022**
- Explainable anomaly detection framework for maritime main engine sensor data, D. Kim, G. Antariksa, M.P. Handayani, S. Lee, J. Lee, *Sensors.* (https://doi.org/10.3390/s21155200) **2021**
- Anomaly detection in vessel sensors data with unsupervised learning technique, M.P. Handayani, G. Antariksa, J. Lee, *2021 International Conference on Electronics, Information, and Communication (ICEIC).* **2021**
- Decay Assessment for Propeller of the Frigate Naval Propulsion System with Explainable Artificial Intelligence, M.P. Handayani, G. Antariksa, J. Lee, *Proceedings of the Korean Institute of Industrial Engineers Fall Conference,* 1393-1401 **2021**
- Study on ultraviolet-a of $CaSiO_3$:Ce^{3+} film phosphor, A. Gian, *Master's Thesis, Pukyong National University.* **2020**
- Analisis Porositas Dan Saturasi Air Dalam Integrasi Petrophysics Dan Seismic Multiattributes Untuk Karakterisasi Reservoir, G. Antariksa, H. Danusaputro, T. Yulianto, *Youngster Physics Journal.* **2016**

See Google Scholar for complete publication list

CONFERENCES & PRESENTATIONS

Fall Conference of the Industrial Engineering Society of Korea (2022): Reconstruction of old well log data using deep learning imputation; Decay assessment for propeller of the frigate naval propulsion system with XAI intelligence
International Conference on Electronics, Information, and Communication (ICEIC) (2021): Anomaly detection in vessel sensors data with unsupervised learning technique
International Conference on Advanced Imaging, Japan (2019): Optical and Electrical Properties of Y_2SiO_5:Eu^{3+} Powder Electroluminescent Device
International Conference on Dynamical Processes in Excited States of Solids (DPE-SS), New Zealand (2019): Photon-phonon coupling in $Y_3Al_5O_{12}$:Ce^{3+} nanophosphor; Thermal and concentration dependence in AC-driven powder electroluminescence

CERTIFICATES & AWARDS

- Certificate of achievement in "AI Big Data Joint Research" from Daewoong Pharmaceuticals (2022)
- **1st Place** - Busan Shipbuilding Hackathon: Real-Time Ship Safety Anomaly Detection (2021)
- **3rd Place** - Daewoong Big Data Hackathon: Sano Personal Health Assistant (2021)
- **2nd Place** - DRB Rubber Industry Hackathon: Anomaly Detection on Manufacture Rubber Machine
- As the scholarship awardee "Daewoong Big Data Project Scholarship" (2021–2023)
- As the Government scholarship awardee "NRF BK-21 South Korea Scholarship" (2018–2023)