CHELSA RACHEL WIBOWO

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EDUCATION

Institut Technology Sepuluh Nopember (ITS)   GPA : 3,32 out of 4,00
Bachelor of Mathematics (Aug 2020 – Aug 2024)

Final Project :
Estimation of Remaining Useful Life in Lithium Ion Batteries using Deep Deterministic Policy Gradient.

WORK EXPERIENCE

PT. TELKOMSEL (*Telecommunication Company*)   **Surabaya, East Java**
Data Scientist Intern   **June 2023-Aug 2023**

- Visualize user distribution data from various providers in the form of maps using Python and Tableau.
- Performing profiling using QGIS, finding areas that do not have BTS towers within a certain distance.
- Indexing using SQL, categorizing the number of mobile and wifi users of companies and competitors into several categories.
- Clustering using DBSCAN and K-means.
- Projecting traffic using machine learning (Multilayer Perceptron, Support Vector Regression, and Transformer), displaying trends in each area and finding several cities with the highest predictions using YoY and YtD.

ACHIEVEMENTS AND CERTIFICATIONS

- 3rd Winner of Mathematics PKM Competition 2021 (Department Competition held by ASCI HIMATIKA ITS).
- PKM Funded 2023 (National Competition held by Kemenristekdikti).
- Have certification in Mathematics for Machine Learning and Data Science, TensorFlow Developer, Machine Learning, Data and Deployment Specialization with TensorFlow, and Advanced Techniques Specialization with TensorFlow held by Stanford University & DeepLearning.AI in 2024.

SKILLS

- Microsoft Office
- R
- Python
- SQL
- Tableau
- QGIS
- Java
- C++
- HTML
- CSS
- JavaScript
- Zoho

TRAINING EXPERIENCE

Bangkit Academy led by Google (*Certified Independent Study*)   **Feb 2024 – June 2024**
Machine Learning Cohort

- Studied the core mathematics for machine learning and data science, including linear algebra, calculus, probability, and statistics.
- Build and train neural networks using TensorFlow, improve network performance using convolutions to identify real-world images, teach machines to understand, analyze, and respond to human speech with natural language processing systems.
- Studied modern machine learning concepts, including supervised learning (linear regression, logistic regression, neural networks, decision trees), unsupervised learning (clustering, anomaly detection), recommender systems, and reinforcement learning.
- Train and run models within a browser, optimize machine learning models for mobile devices, and create effective data pipelines with TensorFlow Data Services.
- Optimize training in different environments with multiple processors and chip types and learned advanced computer vision scenarios such as object detection, image segmentation, and interpreting convolutions.

ORGANIZATIONAL EXPERIENCE

ITS Foreign Language Society (*Student Activity Unit*)   **Jan 2021 – Des 2021**
Staff of Inventory Management Department and Volunteer Korean Teacher

- IFLS is a forum for ITS students to learn and develop cultural knowledge and foreign languages.
- Inventory Management staff is responsible for planning, ordering, storing, selling, and monitoring all inventory and maintaining the organization's assets.
- Volunteer Korean teachers are responsible for preparing class materials, teaching, and grading the exams of members.

ITS Mathematics Olympiad (*Annual Event*)   **Apr 2022 - Oct 2022**
Fundraising Committee
- Responsible for developing and implementing strategies to earn income for the organization.
- Build and operate a business to earn revenue to fund the organization's operations.
- Recap, record and report donation result.

Ruang Teras (*Organization*)   **Oct 2023 – Des 2023**
Staff of Finance Division
- Ruang Teras is an online platform that provides various counseling services, educate people about the importance of mental health.
- Responsible for creating financial reports, managing all administration, including the organization's financial traffic using Zoho.
- Responsible for paying the salary bills of psychologists and counselors.
- Collaborate with other divisions to plan for financial needs.

PROJECT EXPERIENCES

PT TELKOMSEL – BTS Tower Location Determination and Telecommunication Traffic Prediction
- Determine areas with high demand for telecommunication services and identify potential locations for placing BTS towers.
- Used QGIS software to visualize and analyze geographic data, including population and infrastructure.
- Applied SVR, MLP, and Transformer to analyze traffic data and forecast future capacity requirements, including user growth.
- Create a comprehensive and effective weekly report

KAMPUNG COKLAT – Creating Tourism Website
- Design User Friendly Interface by using HTML and CSS.
- Optimize for Mobile, Responsive Design with CSS.
- Incorporate Visual Elements using HTML and CSS.
- Integrate Booking and Inquiry Features with HTML and JavaScript.
- Implement Social Media Integration using HTML and JavaScript.

OPTIVER – Predict US Stocks Closing Movements
- Analyze historical market data and identify stock price movement patterns.
- Forecast stock price movements ahead of the close using machine learning.
- Visualize historical trends and prediction results.
- Evaluate performance metrics to measure the accuracy of the prediction model.

LLM – Detect AI Generated Text
- Exploratory Data Analysis (EDA).
- Tokenization using SentencePieceBPETokenizer which is based on Byte-Pair Encoding (BPE) technique.
- Vectorization with TF-IDF (Term Frequency - Inverse Document Frequency) method.
- Model training using MultinomialNB, SGDClassifier, CatBoostClassifier, and LGBMClassifier.

MARKET SALES – Data Warehouse Analysis
- Extract, Transform, Load (ETL) market sales data using SQL.
- Analyze sales data based on various dimensions using Online Analytical Processing (OLAP).

EDULINK – Creating Online Tutoring Website
- Designing Data Flow Diagrams (DFD) and Use Cases.
- Designing User Interface (UI) and User Experience (UX) that is user friendly using Figma.
- Website Optimization for access from various devices (responsive design) using Bootstrap.

Recognizing Handwritten Digits
- Recognizing Handwritten Digits from MNIST dataset using Convolutional Neural Network (CNN).

AI PLAYING CHESS – Train AI to Play
- Developing AI Model for Chess.
- Integrating Neural Network for Reinforcement Learning using TensorFlow.