Ryan (Shu-Rong, Lu)

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EDUCATION

Yang Ming Chaio Tung University **Sep. 2021 - Jul. 2023**
Master of Industrial Engineering & Engineering Management | Artificial Intelligence & Machine Learning Lab

Yuan Ze University **Sep. 2017 - Jul. 2021**
Bachelor of Industrial Engineering & Engineering Management

INTERNSHIPS

Intelligent Manufacturing Engineer Intern **Jul. 2022 - Aug. 2022**
Taiwan Semiconductor Manufacturing Co. Hsinchu, Taiwan

- Analyzed arrival patterns and wait times to optimize the QC Scheduling System
- Developed algorithms incorporating dynamic resource allocation and prioritization of urgent items
- Achieved a 30% reduction in total wait times
- Streamlined the QC process flow through intelligent batching and adaptive resource leveling, leading to the improvements mentioned above

PROJECT EXPERIENCE

Predicting Wafer Material Removal Rate for Semiconductor Chemical Mechanical Polishing Using a Fusion Network **May. 2021 - Sep. 2021**

- Proposed a model named "Fusion Network" to predict Wafer Material Removal Rate (MRR) for semiconductor quality control
- The model outperformed others by 5.84% in MSE and 4.25% in MAE
- Published in Applied Science: "Predicting the Wafer Material Removal Rate for Semiconductor Chemical Mechanical Polishing Using a Fusion Network."

Solar Power Generation Forecasting **Dec. 2022 - Jun. 2023**
Collaborated with the National Renewable Energy Certification Center to identify factors influencing solar panel power generation.

- Utilized web scraping to collect historical weather and air pollution data, and performed data cleaning and integration
- Used XGBoost for prediction and SHAP for feature visualization to uncover hidden patterns
- Published at the 2023 International Conference on Management Science and Industrial Engineering (MSIE)

Full-Sky Image Solar Power Forecasting **Apr. 2023 - Sep. 2023**
This project was a collaboration with the National Renewable Energy Certification Center to develop a short-term power generation prediction model.

- Preprocessing: Cloud cover detection, sun position detection
- Proposed a Temporal Attention module to enable the model to capture spatial and temporal information
- Utilizing this module, the model achieved an average 15% reduction in MSE

Financial Statement Fraud Detection with Hierarchical Attention Networks **Apr. 2023 - Jul. 2023**
This project aimed to detect financial statement fraud by analyzing large amounts of public text and data.

- Used a hierarchical attention network model to extract textual features from the Management Discussion and Analysis (MD&A) section of annual reports for fraud detection.
- Results showed a 10% improvement in accuracy compared to other models.
- Leveraged the attention mechanism to identify key fraud indicators, enhancing model interpretability.

SKILL

Programming Languages: Python, C/C++, HTML/CSS, R
Frameworks: Selenium, Hadoop
Deep Learning Frameworks: Pytorch, Keras
Data Visualization: Power BI, Matplotlib, Seaborn
Databases: MySQL, SQLite
Tools: Git, Docker
Cloud Platforms: AWS, Google Cloud Platform
Other Skills: Statistical Modeling, Data Mining, Exploratory Data Analysis
Languages: Taiwanese (native speaker), English (normal)