Lee Ming Xiang

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I am a data analytics engineer with petroleum geoscience background. I have three years of broad-based experience in building machine learning solutions in solving oil and gas industry challenges, specifically in production, petrophysics and geophysical domains.

Proficient in predictive modelling, data processing, data analytics, and Python scripting. I am active in learning, and proactive in trying innovative ideas for problem solving.

SCAN ME

Core Skills

Machine Learning,
Petroleum Geoscience,
Deep Learning,
Natural Language Processing,
Data Visualization,
Data Mining

Syntax & Software

Python,
Structure Query Language (SQL),
Spotfire, Power BI,
Azure,
Oracle Database,
Docker, Dataiku,
Petrel, Omega

General Skills

Problem Solving,
Teamwork,
Adaptability,
Organizing/ Planning,
Decision Making,
Proactive Learning,
Fast Learner

Working Experience

Data Analytics Engineer

KL Innovation Factori, SLB
Jun 2021 – Present *Kuala Lumpur, Malaysia*

1. *Data Driven Optimization for Rock Physics Modelling Assisted by Machine Learning*
   - Develop innovative optimization workflow integrate data driven (data science, machine learning) and physics-based approach.
   - Deployed SaaS user centric web application for comprehensive visuals

2. *Oil and Gas Language Models- Unsupervised Multitask Learning*
   - Explore the development of an oil and gas language model (LM) using an unsupervised multitask learning approach.
   - Publication:https://onepetro.org/SPEADIP/proceedings-abstract/23ADIP/2-23ADIP/D021S065R005/534580

3. *Information Retrieval from Oil and Gas Unstructured Data*
   - Automated information extraction, and relationship extraction from Daily Production Report applying Natural Language Processing (NLP).
   - Mentoring in research for oil and gas language model and rapid risk identification from Daily Drilling Report.
   - Publications:
     1. https://doi.org/10.3997/2214-4609.202332039 ,
     2. https://www.researchgate.net/publication/374503942_Unlocking_Value_from_Text_Visualizing_Insights_with_Natural_Language_Processing_in_Unstructured_Oil_and_Gas_Reports

4. *Pattern Recognition between Petrophysics and Production*
   - Cross domain machine learning prediction project in team to recognize the dominant factor in predicting the production potential.
   - Applied and compare various machine learning algorithms in predicting the hydrocarbon flag, perforation zone, permeability, and production rate.
   - Generated hypothesis testing to find correlation between estimated petrophysical production rate and the actual production rate.

5. *Well Performance Analytic Dashboard*
   - Deployed diagnostic Spotfire analytics dashboard to identify the overperforming and underperforming well.
   - Positive feedback from stakeholders on the usability, and dashboard visualization.
   - Integrated workflow from retrieving data using API, data processing, to data analytics from Production Data Foundation, Dataiku to Spotfire.

6. *CO2 Emission Monitoring based on Prediction of Gas Fuel Rate -Time Series Prediction*
   - Publication: https://doi.org/10.3997/2214-4609.202272010 (EAGE Conference on Digital Innovation for a Sustainable Future).
   - Business impact award for 2021 SLB Asia Sustainability Hackathon.
   - Deployed Extra Tree algorithm in predicting the gas fuel rate to calculate the emitted CO2 in next 7 or 14 days.
   - Created a predictive analytic dashboard using Power BI by ingesting the data using API from the Dataiku Server.

Certifications

- **DELFI Data Science - Practitioner**
- **Dataiku Core Designer**
- **Dataiku ML Practitioner**
- **Dataiku Advanced Designer**
- **Tibco Certified Associate Spotfire**
- **Industrial Data Fundamentals**
- **Data Fusion Fundamentals**
- **OSDU Developer Training**
- **Oracle Database Design**
- **Oracle Database Programming with SQL**
- **Azure AI Fundamentals**
- **Azure Data Fundamentals**
- **Geosolutions Horizon Fixed Step Training Phase 1 ,2,3**

Mentoring and Leadership

Technical Committee for SLB Machine Learning Innovative Competition

Jan 2023 - Jun 2023

Review the data science challenges and DELFI technology stack used for the competition.

Technical Committee & Mentor for APGCE GeoHackathon

July 2022 - Nov 2022

Worked with Petronas management, geoscientists, and data scientist in developing oil and gas upstream data science challenges. Mentoring participants in applying data science to domain challenges.

Technical Committee for SLB Beijing Geoscience Center

Dec 2021 - Jan 2022

- Introduced the hackathon challenge in forecasting the production decline curve using both production and formation data.
- Collaborating with colleague in Beijing in preparing the data, machine learning workflow and documentation for the hackathon challenges.
- The hackathon has 133 participants joined from Kuala Lumpur, and Beijing.

Personal Projects

- Automatic Detection of Solar Roof Top using Computer Vision
  https://github.com/mingxiang1006/solar_ai
- Groove Defect Segmentation using Computer Vision
  https://www.kaggle.com/code/mingxiang1006/unet-seg
- Machine Learning with Optimized Parameters for Ecommerce Product Classification
  https://github.com/mingxiang1006/Ecommerce-Product-Classification/tree/main
- Future Sales Prediction
  https://github.com/mingxiang1006/Predict_Futre_Sale
- Telco Customer Churn Prediction
  https://github.com/mingxiang1006/Telco-Customer-Churn-Prediction
- Nasdaq Stock Portfolio Optimization
  https://github.com/mingxiang1006/Stock-Portfolio-Optimization

Education

Master of Data Science

Oct 2020 – Jun 2022 *University Malaya (UM), Kuala Lumpur*

Master Thesis: Generation of Carbon Dioxide Emission based on Prediction of Gas Fuel Rate using Machine Learning (Time Series Prediction)

Bachelor of Technology (Hons) in Petroleum Geoscience

May 2012 – May 2017 *University Technology PETRONAS (UTP), Perak*

Majoring in Exploration Geophysics, Fundamental in Geology, Petrophysics, and GIS
Final Year Project: Application of Simultaneous Inversion in Sarawak Basin, Malaysia

Student Exchange Program

Aug 2015 – Dec 2015 *Missouri University Science & Technology, United States*

Studied Petroleum Economics, Reservoir Characterization, General Psychology and Technical Communication