MADELINE LUI

madelinewylui@gmail.com   Portfolio   LinkedIn   GitHub

SUMMARY

With 4 years of experience in data analysis, I possess strong coding and statistical skills. My biggest achievement is improving a photovoltaics time-series forecast model by more than 80%.

SKILLS

Python, R, MATLAB, Statistical Methods, Data Visualisation

PROJECTS

Wind energy analysis   Ongoing

- **Aim**: Analyse wind energy yield performance from a wind turbine's SCADA system in Turkey over a 12 month period, and present the key insights on Tableau.
- **Skills used**: Python, Time-series Forecasting, Data Visualisation Dashboard.

Solar time-series forecast   2024

- **Aim**: Analyse the performance and power output of two solar panels in India across 35 days, and evaluate the best independent variables to predict power output.
- **Result**:
    - Conducted an exploration analysis on sensors and panels to identify a 97% conversion efficiency and 12% performance ratio for data-driven recommendations on equipment maintenance.
    - Evaluated model performance of forecasting power output on 3 machine learning models, before implementing the XGBoost model on the variables Time, Module Temperature and Irradiation to improve performance by more than 80%.
- **Skills used**: Python, Time-series Forecasting, XGBoost, Data Visualisation.

EXPERIENCE

Muckli Lab, University of Glasgow   2023—2024

Undergraduate Research Assistant

- Developed an interactive user interface and automated the detection of object occlusions on images from a dataset of >200k images using Python.
- Delivered my thesis project by performing multivariate pattern analysis and bootstrap simulations on 7-T fMRI data using MATLAB.
- **Skills used:** Python, MATLAB, Multivariate Analysis, Multidimensional Matrices, Bootstrap Analysis, Data Wrangling, Programming automation.

EDUCATION

University of Glasgow (First Class Honours)   2020 — 2024
BSc (Hons) Psychology with Neuroscience Specialism
    Relevant Modules: Linear algebra, multivariate calculus, probability theory and statistics, R programming.
United World College Li Po Chun of Hong Kong   2018 — 2020
Lycée Français International de Hong Kong   2013 — 2018

PROFESSIONAL DEVELOPMENT AND AWARDS

MIT open course ware   Ongoing

- Differential equations course consisting of 30 lectures and assignments.

International Standard for Photovoltaics System Performance (Edition 2.0 2021)   2024

- Studied 'Part 1: Monitoring' of the international standard for photovoltaics system performance in my own time.

BPS Conference Award   2024

- Dissertation research awarded Best Presentation in cognition and perception at the annual undergraduate conference hosted by the British Psychological Society.

Concerto Primo Performance Zertifikat (Pianoforte)   2018

- Awarded by the Vienna Music Examination Board, equivalent to a final year bachelor music student. This qualification was earned from my piano education since age 4, which I've continued playing over the last 18 years.

VOLUNTEERING

Children's Ministry Hong Kong and Scotland   2019 — 2023

- Led Sunday church programs for children ages 5-12 and weekly meetings with over 10 volunteers.
- Successfully managed last-minute challenges, including stepping-in to lead a team of 4 volunteers and >30 children, and implementing conflict resolution strategies, resulting in an 80% increase in team efficiency during high-pressure situations.
- Coordinated the annual curriculum and delegated responsibilities to a cross-functional team of 6.

LANGUAGES

English   Native
French   Full professional proficiency
Spanish   Professional proficiency