NICHOLAS KO

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EXPERIENCE

DSO NATIONAL LABORATORIES Singapore
Operations Research Analyst Aug 2024 – Present

ADATOS Singapore
Geospatial Analyst Intern May 2023 – Jul 2023

- Worked in the agriculture-tech team to process and analyse satellite (multispectral/SAR) images using Python and QGIS.
- Implemented image segmentation algorithms in Python and QGIS for automated land use/land cover classification, significantly improving efficiency for the team's classification workflow.
- Used Python to analyze and simulate financial scenarios in Excel, aiding a new company's fundraising efforts with worst-case, base-case, and best-case financial projections

YALE-NUS COLLEGE **p**Singapore
Research Assistant May 2021 - Jul 2021

- Researched under Assoc. Professor Michiel van Breugel to perform exploratory data analysis on mangrove tree data collected from Pulau Ubin; Aimed to test if ground elevation and species abundance could predict mangrove diversity in research plots.
- Analysed mangrove forest dataset of 5000+ plants planted on land previously used for shrimp farming.
- Constructed visualisations in RStudio using: 'ggplot2', 'dplyr', 'vegan' to visualise results.

EDUCATION

YALE-NUS COLLEGE Singapore
B.S. Mathematical, Computational and Statistical Sciences (Data Science Track) 2020 - 2024

- GPA: 4.37/5.00
- Coursework: Stochastic Processes, Graph Theory, Finite Geometry, Generalised Linear Models, Statistical Inference, Probability, Linear Algebra, Data Structures and Algorithms.

PROJECTS

COVID-19 Policy Comparison Sep – Nov 2022

- Aimed to compare COVID-19 policies among countries and determine their usefulness in reducing COVID fatalities.
- Used dynamic time warping algorithm to cluster 229 countries into 8 clusters based on COVID fatality metric.
- Visualised and evaluated policies using Plotly during the highest peak of COVID fatalities per country; Found similarities between the COVID fatality peaks and mitigation policies in UK and Indonesia.

Stroke Prediction Model Sep – Nov 2021

- Aimed to predict stroke in patients based on their health and lifestyle data using SMOTE.
- Used scikit-learn models to predict stroke diagnosis based on patient's BMI, glucose levels etc.
- Applied SMOTE to balance an imbalanced dataset comprising of 5110 stroke/non-stroke patients.
- Applied K-nearest neighbor model that correctly identified 100% of stroke cases, 96% of non-stroke cases.

ADDITIONAL INFORMATION

- Languages: English (native), Cantonese (conversational)
- Programming Languages: Python, R.
- Software: QGIS