NICHOLAS KO

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EDUCATION

YALE-NUS COLLEGE Singapore
Bachelor of Science, Data Science Major 2020 - 2024

- Coursework: Probability, Linear Algebra, Programming for Data Science, Geospatial and Demographic Methods (QGIS).
- Recipient of FM (Factory Mutual) Global Scholarship.

HWA CHONG INTERNATIONAL SCHOOL Singapore

- International Baccalaureate Diploma (40/45 Points) 2016 - 2017
- Higher Level Subjects: Math, Physics, History;
- Standard Level Subjects: English Language and Literature, Chemistry, Chinese.
- Extended Essay/Theory of Knowledge Grade (A/B)

EXPERIENCE

YALE-NUS COLLEGE 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 affected mangrove diversity in research plots.
- Analysed mangrove forest dataset of 5000+ plants planted on land previously used for shrimp farming using [insert software].
- Constructed visualisations in RStudio using: 'ggplot2', 'dplyr', 'vegan' to visualise results.

PROJECTS

Migrant Worker Bus Travel Data Oct – Nov 2022

- Aimed to understand the travel constraints of migrant workers to reach basic amenities to help organisations prioritise welfare services to these workers.
- Filtered through 15 million data points of origin-destination bus travel data obtained from Land Transport Authority.
- Created 8 maps to analyse bus travel data around 10 migrant worker dorms in QGIS.

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), Singapore Sign Language (beginner)
- Programming Languages: Python, R.
- Software: QGIS.