YUMO YAO

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**EDUCATION**

**National University of Singapore** Singapore

M.S. in **Business Analytics** Expected: September 2023

* CAP: 4.5/5

**New York University** Shanghai, China

B.S. in **Data Science** and **Business and Finance** (Business Analytics Track)August 2018 – May 2022

* Dean’s List 2021 – 2022 | CGPA: 3.5/4

**WORK EXPERIENCE**

**SAP** Singapore

AI Engineer InternMay 2023 – Now

* Developed knowledge graphs (Neo4j, TigerGraph, Memgraph) of 407,000 nodes with contract data retrieved from OpenSearch using ElasticSearch and DSL queries, reducing 100+ changes per update
* Extracted keywords using LLM and prompt engineering from 190 contracts, implemented association rules mining for 19 keywords with Python Apriori and GSQL queries, enabling similar keyword searching for business
* Developed a contract analysis function utilizing RegEx and SpaCy to locate and LangChain to extract relevant information, subsequently enhancing its performance and functionality through prompt engineering
* Adopted Agile, Scrum, and Kanban for project management, effectively aligning with business requirements, ensuring on-time delivery of 3 projects to a 20-person business team

**ParkRoyal on Beach Road** Singapore

Data AnalystDecember 2022 – Feburary 2023

* Created auto-updated occupancy reports and visualizations from raw reservation records, utilizing Python hvplot library for dynamic plots including calendar views, reducing 30+ mins per update while achieving 98% accuracy
* Processed and analyzed a time-series dataset of 600,000+ flight records; developed a categorization framework based on lead time and flight class, yielding insights into customer price sensitivity and decision-making

**Shanghai Disney Resort** Shanghai, China

Intern, Revenue Management & AnalyticsMay 2021 – August 2021

* Developed revenue prediction model with Python and achieved 90% accuracy; collaborated with cross-functional teams to refine the restaurant pricing strategies based on predictions, increasing the revenue by 15%
* Wrote SQL queries to extract data from databases and developed a spreadsheet that integrated SQL queries to automate the data extraction, transformation, and loading process, reducing workflow time by 40%
* Created 4 monthly Tableau dashboards to track resort performance, uncovered customer consumption habits by visualizing customer behavior over timeline to support business decisions

**Sinolink Investment Services Co., Ltd.** Shanghai, China

Data Analyst InternMay 2020 – Aug 2020

* Maintained and monitored financial products database and wrote SQL queries to support business operations
* Applied linear regression models to over 1,000 financial products to identify categorization anomalies
* Calculated depreciation and amortization of the company's fixed assets using pivot tables

**SELECTED PROJECTS**

**Paymo – E-wallet for Safe Transaction Empowered by Blockchain** May 2023 – April 2023

* Conducted market research and competitor analysis on 3 payment applications and 3 banks in SEA
* Designed an e-wallet app, Paymo, integrating blockchain-based user verification, incorporating deep learning models to detect transaction anomalies, resulting in increased user trust and reduced fraudulent activities

**Neural Multi-task Learning for Disaster Detection and Sentiment Classification** May 2023 – April 2023

* Combined and preprocessed two datasets (28k sentiment, 8k disaster entries) using NLTK, visualized with word clouds, and prepared for model training with tokenization, padding, and generating attention masks
* Built a Neural Network with embedding, LSTM, dropout, and fully connected layers, trained on a combined dataset with weighted loss of 2 tasks, fine-tuned the weight using ax-platform, achieving an F1 score of 0.77

**Explainable AI Analysis on Employee Attrition** March 2023 – April 2023

* Processed dataset of 1.5k entries; developed Random Forest and XGBoost models, achieving an F1 score of 0.88
* Applied XAI tools like Permutation Feature Importance, Partial Dependence Plots, SHAP, LIME, and Counterfactual Explanations for model interpretation, refining feature selection and achieving 0.9 F1 Score

**Operations Research Analytics on Traveling Salesman Problem** October 2022 – November 2022

* Developed a fixed-driver and a multi-driver delivery model with corresponding constraints, minimizing travel distance and optimizing driver count
* Solved the model with Python Gurobi package with model variables, objectives, and constraints

**Impact of Volcker Rule on Banks: A Statistical Analysis** October 2022 – November 2022

* Preprocessed an 81,560-entry bank dataset, handling missing values, segregating treatment and control groups
* Applied propensity score matching using Python, creating balanced comparison groups to control baseline bias
* Built an OLS regression model to execute a Difference-in-Difference analysis, observed R-square for the impact

**Customer Retention at HSBC** | New York University Capstone Project January 2022 – May 2022

* Preprocessed and visualized 11 datasets totalling 20k entries using Python to identify customer behavior pattern
* Applied machine learning models to predict customer churn with 96% accuracy by hyperparameter tuning and cross-validation, formulating a profile of high-risk churn customers for HSBC

**Online Air Ticket Reservation System**                                                                                         Mar 2021 – May 2021

* Designed the entity-relationship (E-R) diagram for the database and developed a relational MySQL database
* Developed a front-end airline ticket booking system using JavaScript and HTML, integrating it with a back-end database via Python's PyMySQL package

**SKILLS**

**Languages:** English, Mandarin Chinese

**Programming Languages:** Python, R, SQL, GSQL, Cypher (Neo4j), JavaScript, CSS, HTML

**Tools:** Git, Docker, Excel (Pivot Table, Vlookup), PowerBI, Tableau, Minitab

**Libraries:** Pandas, NumPy, Scikit-learn, Keras, Tensorflow, Pytorch, NLTK, SpaCy, Gurobi, LangChain, React.js

**Soft Skills:** Communication, Teamwork, Time Management, Analytical Thinking