Yixuan Deng

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Summary

MEng in Computer Engineering with concentration in Data Science (DS) & Machine Learning(ML). Two DS internship offering expertise in data analytics and machine learning model development, driving improved business decision-making. Proficient in key DS tools, including Python, SQL, and data visualization techniques.

Education

MEng, **Data Science & Machine Learning**, *University of Michigan*   Aug 2023 – Expected Dec 2024

BS, **Computer Engineering** (GPA: 3.75/4.0) *Rutgers University, New Brunswick*   Aug 2019 - May 2023

Professional Experience

Data Scientist Intern | Stori   *May 2024 – Aug 2024*

*Fraud detection of employees' payment behaviors on abnormal transaction data using **Python** and **SQL***

- Developed a fraud detection model utilizing a dataset of over 6 million transaction records. Conducted exploratory data analysis (EDA) to uncover data distribution, patterns, and outliers. Created a classification model that optimized business outcomes, enhancing fraud detection accuracy by 14% and establishing a solid foundation for the next-generation fraud detection model.
- Utilized the Local Outlier Factor (**LOF**) algorithm toidentify anomalous transaction patterns, achieving 94% classification accuracy, with a 0.12 false positive rate and an F1 score of 0.71
- Created visualizations using scatterplots and color mapping, enabling business stakeholders to interpret data easily and make more informed decisions

*Risk model version and population movement analysis using **SQL** and **TablePlus***

- Identified unexpected population shifts across two versions of customer risk score estimation models, summarized key findings, and shared with senior data analyst. This enhanced the understanding of model performance and user behavior change dur the model update period

Software Engineer Intern | Goke Microelectronics Co., Ltd.   June *2023 – Sep 2023*

*Software development of video parser and software interface design using **C/C++ and MFC***

- Redesigned video parser and extended video parsing capabilities beyond the orignal scope, enabling a more sophisticated, user-friendly layout and easier implementation.
- Developed a real-time progress bar to display the percentage of file reading and decoding

Data Scientist Intern | Moyi Tech   *Sep 2022 – Dec 2022*

*Analyze stock pricing and generate valuable insights into various stock sectors using **Python***

- Extracted real-time stock market pricing using Python APIs (yfinance, FRED, and Tushare), ranked performance across various stock segments, and delivered weekly insights to customers, empowering them to make informed financial decisions

Projects

Nucleus Segmentation Using UNet++   **Ann Arbor, MI**

- Replicated the **UNet++** network for cellular segmentation using **Python**, enabling more accurate diagnosis of cellular illnesses and supporting improved medical decision-making
- Standardized cellular image staining using techniques, such as color transfer and **sliding window augmentation**, enhancing model robustness and training efficacy

Bird's-Eye-View Former   **Ann Arbor, MI**

- Optimized current birds eye view algorithm, using **PyTorch**. This improved model's performance by 15%. This enables faster road condition assessment, obstacle recognition, and faster reaction, minimizing potential road accidents.
- Integrated the algorithm into the **EasyCV** framework and optimized training efficiency and algorithmic convergence

Technical Skills

Programming: Python, PyTorch, SQL, MATLAB, C/C++, MFC

Tools: Jupyter Notebook, MySQL, PyCharm, TablePlus, DBeaver, LaTeX, VS 2019, VSCode, Git

Machine Learning: Classification (Logistic Regression, K-Nearest-Neighbors, Support Vector Machine**)**, Clustering, Dimensionality Reduction & Feature Discovery (Principal Component Analysis)