WEI ZHE LIU

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Experience

Junior Data Engineer | Standard Chartered Bank — **Kuala Lumpur, Malaysia** — **Aug 2024 - Present**

- Engaged in comprehensive training on data engineering workflow and technologies used in banking systems
- Assisting in the development and maintenance of data pipelines to support business intelligence processes
- Collaborating with global teams to ensure data accuracy and optimize ETL processes for high-performance analytics

Computer Vision Engineer | Purdue University — **Indiana, United States** — **Jan 2024 - May 2024**

- Represented Purdue to design a fully autonomous low-profile vessel for AIMM ICC with a focus of computer vision task
- Led the research and creation of a robust dataset for obstacle detection and implemented Python script with YOLOv8 for data pipeline
- Demonstrated technical prowess and contributed to the success of the project, enhancing skills through feedback and collaboration

Data Analyst | nanoHUB.org — **Indiana, United States** — **Aug 2023 - Dec 2023**

- Enhanced user experience on nanoHUB, a leading online platform for nanotechnology, through refining the classroom cluster detection system with advanced algorithms
- Implemented an incremental approach, focusing on early data usage to predict emerging trends in classroom dynamics and proactively identifying behavior patterns for optimized user experience and resource allocation
- Played a key role in code development, statistical analysis, and data visualization for the clustering algorithm, presenting findings to the team in weekly meeting with mentors

Projects

Computer Vision on NVIDIA Jetson Nano

- Designed and implemented a real-time object classification system using NVIDIA Jetson Nano, OpenCV, and Jetson Inference, enabling interactive object detection with a mouse-driven region of interest (ROI)
- Optimized system performance by leveraging CUDA parallel computing for efficient processing of video input and neural network inference
- Experimented with pre-trained neural networks like GoogleNet to achieve accurate object classification, integrating results into dynamic video overlays and terminal outputs

Kaggle Bank Lending Prediction

- Participated in a community Kaggle competition focused on making lending (binary classification) for a bank, ranked 12th place among a total of 130 classmates
- Conducted data exploration and cleansing for modeling, including handling missing values, removing outliers, and encoding categorical variables
- Trained and evaluated multiple classification models, including Random Forest, Gradient Boosting, and AdaBoost, using a variety of performance metrics

Ant Colony Optimization for Vehicle Routing Problem

- Implemented an Ant Colony Optimization (ACO) algorithm to solve a challenging Vehicle Routing Problem (VRP) involving multiple customers, varied demands, and different vehicle types
- Developed a sophisticated edge selection mechanism considering pheromone levels, heuristic information, and vehicle capacity constraints to construct optimal routes
- Achieved rapid convergence to a near-optimal solution satisfying all hard constrains and minimizing overall delivery costs

Languages and Technologies

- Python, Databricks, SQL, R, CUDA, Docker, GitHub, Roboflow, Google Cloud, ChatGPT, Hugo, Microsoft Office
- Big Data & Machine Learning: scikit-learn, PyTorch, Jetson Inference, OpenCV, Matplotlib, Spark, Hive, Hadoop, YOLOv8
- Data Science pipeline (cleansing, wrangling, visualization, modeling and interpretation)

Education

Purdue University — **Indiana, United States** — **Aug 2020 - May 2024**

- Bachelor of Science in Data Science, Class of 2024
- Coursework: Data Mining and Machine Learning, Large Scale Data Analytics, Information Systems, Statistics for Data Science