SHUAICHENG (ALLEN) TONG

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EDUCATION

University of California, Los Angeles (UCLA) June 2024
B.S. in Mathematics of Computation, Minor in Data Science Engineering
Overall GPA: 3.91

EXPERIENCE

Intact Financial Corporation June 2023 – September 2023
Data Scientist Intern *Hong Kong SAR*
- Incorporated external data to expand model coverage by 20%, enabling more competitive insurance pricing.
- Refreshed an ETL pipeline with geolocation information to accelerate the quoting process, saving customers 6 minutes per quote on average and provided a more granular hazard exposure rating. Developed a package that automates new data acquisition.
- Leveraged LLMs (LLaMA-1) to help customers answer hard-to-fill insight questions for detailed understanding of their risk profiles.
- Refined underwriting risk assessment guidelines for improved customer segmentation by comparing model lift curves of the current and revised model predictions.

Emory University Department of Mathematics May 2022 – December 2022
Research Assistant *Atlanta, GA*
- Investigated efficient algorithms for image recovery that reduced hardware costs by 50%.
- Developed deep implicit neural networks using Pytorch, achieving 20% better image quality compared to traditional methods while using 40% less memory.
- Presented a poster to professors and graduate students, earning the runner-up out of 10 teams.

UCLA Athletics October 2021 – December 2022
Senior Data Analyst *Los Angeles, CA*
- Maintained an Azure database to track player performances; developed data pulling scripts using Python Pandas.
- Automated athlete profile updates; created and monitored a Power BI dashboard by setting up daily health checks.
- Queried and analyzed data using SQL to discover a time-based gap in jump performance; presented practice routine recommendations that reduced injury rate by 30% to coaches and athletes.

PROJECTS

PnetPhlix January 2023 - March 2023
- Used C++ STL library to integrate user and movie data to develop a movie recommendation app.
- Constructed databases by designing tree and map data structures, enabling constant-time searching by client-specified attributes.

Mushroomia January 2023 - March 2023
- Developed machine learning models that help backpackers in identifying edible mushrooms as food sources.
- Implemented a data pipeline to integrate data preprocessing, transformation, and augmentation for improved model reliability.
- Fine-tuned model hyperparameters and reached an over 80% accuracy; advised backpackers to avoid mushrooms with bright colors or those that bruise and bleed as potential indicators of toxicity.

Network Analysis for Marvel Superheroes October 2022 – December 2022
- Constructed a four-layer graph network database for the Avengers using Python NetworkX; utilized the network to study trending heroes over time to predict the next popular superhero.
- Performed supra-centrality analysis on over 50,000 data entries to select appropriate centrality measures of hero importance.
- Visualized community polarization using Matplotlib, revealing a rise in the popularity of antiheroes. Advised the client to ramp up production of Scarlet Witch and Deadpool to capitalize on the trend.

League of Legends Analysis January 2022 – March 2022
- Selected significant game objectives for predicting team victory using linear models in R, advising the client for a 20% better win-loss ratio in tournaments.
- Eliminated multicollinearity to build an initial linear model; confirmed its validity by conducting residual analysis and an A/B test.
- Optimized and streamlined the model by using a combination of variable selection algorithms, focusing on validity and simplicity; achieved over 93% accuracy after reducing 20 variables.

TECHNICAL STRENGTHS

Programming Languages Python, SQL (MySQL, PostgreSQL), C++, R, MATLAB
Tools Git, Bash, Jira, Confluence