Chengdao Yang

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Experience

Royal Bank of Canada *Nov 2020 - Present*
XVA Risk Manager *Toronto, Canada*

- Built Machine Learning models to predict portfolio PnL under stress scenarios, using **sklearn**, **Statisticmodels**, **Numpy**, and **Scipy** to implement **GLM**, **regularization**, **Boosting**, **SVM**, and **Cross-Validation** for model selection and parameter tuning, and customized **Robust learning**
- Applied **natural language processing (NLP)** technique, **named-entity recognition(NER)**, using **Spacy**, **NLTK** to match hundreds of single name CDS hedges with their respective CVA exposures to ensure accurate delta hedge for $200M worth of trades
- Developed extensible database and pipeline for XVA market risk, implementing Object-Oriented **design pattern** such as adapter, factory, bridge, facade in **Python**, supporting over 60% of XVA risk analyses
- Performed event-driven data analyses, **statistic interference** and **combinatorial optimization**, including ctpy industry group **clustering**, XVA cross-gamma estimation, **dimension reduction** via **t-SNE** and **PCA**, default prediction models for CVA, and **Mixed Integer Programming** using **Gurobi**

Royal Bank of Canada *May - Aug 2019*
FICC Market Risk Analyst *Toronto, Canada*

- Designed and implemented interactive dashboard via **R**, **R-shiny**, **Altair**, **D3.js**, and **SQL** to enhance risk monitoring process by visualizing over 2000 critical financial measures across 80% of trading desks, and serving real-time **Monte-Carlo simulation** for future risk exposure
- Implemented ATOM database to streamline workflow and retire obsoleted one via **Pandas**, **PySpark**

Project

Genealogy website *link: http://yangjiazupu.com/tree* *Oct 2019*

- Developed and deployed a **Django** web app on **GCP/Aliyun** with **Apache**, **WSGI**, and **PostgreSQL** via **ORM**, using **Linux**, **tmux**, **bash**, **vim**, and **OOP**, offering genealogy info storage and visualization

Deep Learning-project *Non-disclosure agreement(NDA)* *Sep 2019*

- Analyzed adversarial attacks, **FGM** and its variants, against various network architectures and their defense strategies, and explored semantic with **LIME** and **SHAP**, using **Pytorch**, **Tensorflow**

Zoetis Capstone-project *NDA* *Mar 2019*

- Performed **A/B testing**, and **Customer Life Value** with **shifted Geometirc Beta distribution**, generating valuable insight on advertising channel effectiveness and customer retention
- Built dashboard with **plotly-Dash**, and **Tableau** to support marketing decisions

NYC yellow Taxi *GitHub: https://github.com/ChengdaoYang/NYC_Yellow_Cab_Project* *Feb 2019*

- Predicted adjacency matrix with such **supervised learning** as **regression**, **tree-based algorithms**, and **KNN**, constructed graph via **netwokX**, and visualized with **Plotly**, **matplotlib**, **Seaborn**
- Applied heuristic **Monte-Carlo Tree Search** to optimize taxi profit in time-varying randomized graph

Education

Columbia University *GPA 3.63* *Sep 2018 - Dec 2019*
Master of Science in Business Analytics

York University *GPA 3.62* *Sep 2010 - June 2016*
B.A.S. Honors Specialized in Finance: *Cum Laude, scholarship, and Member of Dean's Honor's Roll*