Bingfan Liu

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SUMMARY OF QUALIFICATIONS

- 4 years' data analysis experience using R, Python and experience in using SQL.
- Machine learning experience using Keras, PyTorch, Scikit-learn, Numpy, Matplotlib, Pandas, Jupyter Notebook and Google Colab.
- Computer vision experience using Scikit-image, ChainerCV, Torchvision, PIL.
- Strong Statistics background in machine learning, statistical modeling, Bayes, sampling, experiment design and hypothesis testing.

EXPERIENCE

Machine Learning Researcher in Functional Data Analysis **On going Jan. 2020 – Aug. 2020**
University of Waterloo, Department of Statistics and Actuarial Science
- Designing statistical machine learning algorithm using functional data.

Data Scientist Research Intern **June. 2019 – Dec. 2019**
United Nation
- Replicated Convolution Neural Network method for classifying the poverty regions in African countries.
- Used Principle Component Analysis and Random Forest to predict the sever rain fall for agriculture.

Teaching Assistant in Statistics **Sept. 2019 – Aug. 2020**
University of Waterloo, Department of Statistics and Actuarial Science
- Tutored undergraduate science student's probability and statistics theory classes.
- Tutored undergraduate finance students' data analysis using R.

Research Assistant in Law Economics **Feb. 2017 – Apr. 2017**
University of Waterloo, Department of Economics
- Programed Python code for a quicker data collection of Canadian legislative activities.

EDUCATION

Master of Mathematics in Statistics **Sept. 2019 – Aug. 2020**
University of Waterloo, Canada
- **Relevant Courses**: Computer Vision, Machine Learning, Graphical Model, Bayesian Statistics, Experimental Design, Non-parametrics.

Bachelor of Arts, Honors Econometrics Joint Honors Statistics **Sept. 2016 – Apr. 2019**
University of Waterloo, Canada
- **Major Grade Average**: 90.69%.
- **Relevant Courses**: Time series, Data types and structures, Regression, Money and banking, International trade.

PROJECTS

Machine Learning: Life Satisfaction Prediction, Kaggle Competition **Mar. 2020**
- Predicted life satisfaction using: Random Forest, Boosting, SVM, Logistic Regression, Neural Network, Voting and Stacking.

Computer Vision: Deep Image Prior, Semantic Segmentation, Semi-Supervised Segmentation, Mosaic **On going Jan. 2020**
- CNN prior analysis and its application in Denoising, Inpainting and Super-resolution.
- Performed Supervised Semantic Segmentation using Deep Learning method.
- Performed Semi-Supervised Segmentation using S/T Graph Cut and Clustering method.
- Built panorama mosaic using RANSAC.

Time Series Analysis: Bitcoin Price Forecast **Jan. 2019**
- Forecasted bitcoin price using multi-time series, driven factors and substitutional digital coin price.

Generalized Linear Model: Diseases Modelling **Aug. 2018**
- Handled over-dispersed data for lung function deterioration in a Cystic Fibrosis study using Ad Hoc and mixed model methods.
- Modeled clinical data by using logistic and Poisson regression.

Sampling and Experimental Design **Aug. 2018**
- Constructed CRD, RBD and Factorial Design for multiple treatments experiments.
- Performed ANOVA tests and some visualization using graphical skills.

AWARDS

The American Statistical Association DataFest
[1] DataFest Competition 2019 - Prize of Honorable Mention **May 2019**
- Forecasted and visualized athlete fatigue level using multiple times series and random forest.
- Visualized key driven factors with fatigue clusters using Python.

[2] DataFest Competition 2018 - Prize of Best Use of External Data **May 2018**
- Visualized the structure of the labor market demand and supply.
- Forecasted the labor demand fluctuations in different industries in the next five years using time series models.