**LUCHAO QI**

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**PROFILE SUMMARY**

Technically-sophisticated top performer with comprehensive experience in performing quantitative analysis and data management for analytics studies utilizing state-of-the-art technologies to collect, clean, analyze, predict, and effectively communicate information. Possess an in-depth understanding of machine learning algorithms and advanced statistics such as regression, time-series forecasting, clustering, decision trees, exploratory data analysis methodology, simulation, scenario analysis, modeling, optimization, unstructured data analysis, and neural networks.

**TECHNICAL PROFICIENCIES**

**Programming:** Python, R (Shiny), SQL, Bash (Linux)

**Visualization**: Tableau, Matplotlib, Seaborn, ggplot2, plotly

**Packages & Frameworks:** NumPy, Pandas, NLTK, scikit-learn, PyTorch, TensorFlow (Keras), Hadoop

**Machine Learning& Deep Learning:** GLM, Random Forest, SVM, PCA, CNN, RNN, Reinforcement Learning

**PROFESSIONAL EXPERIENCE**

**The Johns Hopkins Data Science Lab, Baltimore, MD 08/2019–04/2020**

Research Data Scientist

* Demonstrated mastery in spearheading project focused on association analysis between lifestyle patterns and body mass index (BMI)
* Processed data from the National Health & Nutrition Examination Survey by using dplyr and tidyverse
* Drastically decreased data dimensionality through facilitating principal component analysis (PCA) and also predicted user BMI with 46.07 mean squared error by training a generalized linear model (GLM)
* Achieved a 13% error reduction rate utilizing nested ANOVA (F-test) on principal component groupings
* Recognized for expertise in identifying vital (p-value < 0.5) associations between BMI, age, race, and physical activity level to encourage multiple healthy behaviors

**Johns Hopkins University, Bloomberg School of Public Health, Baltimore, MD 04/2019 – 07/2019**

Data Analyst Intern

* Executed and managed research project on survival analysis of accelerometer time-series data and also optimized data value through researching on user distribution on Hadoop with MapReduce
* Employed the use of Keras to predict mortality with 71% accuracy and structured a spectral-based convolutional neural network (CNN) on subjects
* Accomplished in implementing regularized logistic regression for achieving an 86.45% increase rate in mortality prediction accuracy
* Piloted the process of using ggplot2 and plotly for hosting R Shiny website comparing machine learning algorithms (PCA, k-means, UMAP, and t-SNE) & visualized clustering results

**Shenzhen Institutes of Advanced Technology, Shenzhen, China 11/2016 – 05/2017**

Data Analyst Intern

* Utilized spectral analysis for the project on EMG signal pattern recognition for hand gestures
* Pioneered the process of using Fast Fourier Transform for denoising time-domain signals of 200 gestures
* Generated an 82% accuracy rate in using support vector machines (SVM) for classifying hand movements
* Delivered extensive and innovative insights for medical rehabilitation systems while increasing the neural network training accuracy by 3%

**EDUCATION**

**Johns Hopkins University, Baltimore, MD 05/2020**

Master of Science in Engineering Degree -- Biomedical Data Science (GPA: 3.65/4.0)

**Northeastern University, Liaoning, China 05/2018**

Bachelor of Science Degree -- Biomedical Engineering (GPA: 3.85/4.0)