

# LUCHAO QI

Baltimore, MD

<https://www.linkedin.com/in/LuchaoQi/>

[lqi9@jhu.edu](mailto:lqi9@jhu.edu) | (443)-839-9129

<https://luchaoqi.com/>

## 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 ( $p\text{-value} < 0.5$ ) 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)