

LUCHAO QI

Data Scientist
Baltimore, MD

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PROFESSIONAL SUMMARY

Data Scientist familiar with gathering, cleaning and organizing data for use by technical and non-technical personnel. Advanced understanding of statistical, algebraic and other analytical techniques. Highly organized, motivated and diligent with significant background in predictive analytics.

PROFESSIONAL EXPERIENCE

Data Scientist Intern 08/2020 - Present

Ekohealth, Berkeley, CA

- Help build the product Eko-core, an FDA-cleared digital stethoscope attachment device, saving monthly cost for patients with arteriovenous fistula (AVF)
- Spearhead a project to build the prototype of an audio-based dialysis fistula assessment algorithm detecting stenosis, which help secure a \$295,881 in SBIR funding from the National Institutes of Health (NIH)
- Maintain the database loaded to Amazon S3 bucket using AWS
- Implement Fast Fourier transform (FFT) algorithm on audio signals for feature engineering based on frequency domain
- Constructed a random forest model (acc: 73.68%, AUC: 0.85) detecting stenosis caused by AV fistula

Research Data Scientist 08/2019 - 04/2020

The Johns Hopkins Data Science Lab, Baltimore, MD

- Spearheaded the project focusing on association analysis between lifestyle patterns, physical activity, and body mass index (BMI)
- Migrated data in SAS transport file format from external databases (National Health and Nutrition Examination Survey) using R and processed data using dplyr and tidyverse
- Decreased the data dimensionality using principal component analysis (PCA) and predicted user BMI with 46.07 mean squared error by training a generalized linear model (GLM)
- Achieved a 13% error reduction rate utilizing random forest and nested ANOVA (F-test) on principal component groupings

Data Analyst Intern 04/2019 - 07/2019

Johns Hopkins University, Baltimore, MD

- Executed and managed research project on survival analysis of accelerometer time-series data
- Created a convolutional neural network (CNN) using Keras to predict the 5-year mortality with 71% accuracy
- Improved the accuracy to 86.45% by implementing a regularized logistic regression model using principal component scores
- Hosted R Shiny application comparing machine learning algorithms (PCA, k-means, UMAP, and t-SNE) & visualized clustering results using ggplot2 and plotly

SKILLS

Languages: Python, R (Shiny), SQL, Shell scripting

Visualization: Tableau, Matplotlib, Seaborn, ggplot2, plotly

Packages: Pandas, NumPy, SciPy, NLTK, scikit-learn, Tidyverse

Frameworks & Platforms: PyTorch, TensorFlow, Keras, Hadoop, AWS

Machine Learning & Deep Learning: GLM, Random Forest, SVM, PCA, CNN, LSTM

EDUCATION

Johns Hopkins University
Baltimore, MD 05/2020

Master of Science in
Engineering
Biomedical Data Science
GPA: 3.6/4.0

Northeastern University
Liaoning, CN 05/2018

Bachelor of Science
Biomedical Engineering
GPA: 3.8/4.0