**Luchao Qi**  +1 (443) 839-9129 |  luchaoqi.email@gmail.com

 <https://www.linkedin.com/in/luchaoqi/>

 Baltimore, MD  <https://luchaoqi.com/>

 WORK EXPERIENCE

**Ekohealth** Oakland, CA / Remote

*Data Scientist Intern* 09/2020 – 12/2020

* Assisted in developing the product Eko-CORE, an FDA-cleared digital stethoscope, saving around $900 monthly cost for patients on dialysis
* Headed a project building the prototype of an audio-based dialysis fistula assessment algorithm to detect vascular stenosis in arteriovenous fistula
* Productionalized customer-facing python-based analysis pipeline using AWS cloud services (S3, EC2, SageMaker)
* Designed machine learning models (acc: 73.68%, AUC: 0.85) for stenosis detection
* Prepared regulatory submissions for FDA; helped secure $295,881 in SBIR funding from the National Institutes of Health (NIH)

**The Johns Hopkins Data Science Lab** Baltimore, MD

*Research Assistant* 08/2019 – 05/2020

* Headed a project focusing on association analysis between lifestyle patterns, physical activity, and body mass index (BMI)
* Imported SAS data into R and manipulated data using dplyr and tidyverse
* Developed convolutional neural networks (CNN) using Keras for BMI prediction with 25.45 mean squared error (MSE)
* Reduced data dimensionality using principal component analysis (PCA); improved prediction by 23% training a generalized linear model (GLM)
* Hosted R Shiny website performing cluster analysis; visualized clustering results using ggplot2 and plotly

Demo: <https://github.com/LuchaoQi/Shiny_clustering>

 PROJECTS

**Reinforcement Learning: OpenAI Gym** 02/2020 – 05/2020

AI that Learns to Play Super Mario Bros Using Deep Q-Network (DQN) Demo: <https://github.com/LuchaoQi/Reinforcement_Learning>

* Developed a convolutional neural network (CNN) model as an agent using TensorFlow
* Accelerated model training by 20% optimizing learning rate and optimizer
* Achieved 2X faster than average of human players with the trained agent completing tasks successfully

**Natural Language Processing: Amazon Reviews** 09/2019 – 12/2019

Use of Machine Learning to Detect Fake Amazon Fine Food Reviews

Demo: <https://www.kaggle.com/luchaoqi/amazon-review-rating-prediction>

* Processed Amazon Food Review data using Pandas, NumPy, and dfply
* Tokenized unstructured text of user reviews using NLTK; converted text to vector using bag-of-words models with scikit-learn
* Predicted customer ratings using logistic regression with 0.94 AUC
* Improved negative reviews detection by 3% using random forest

 SKILLS

**Programming Languages**

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

**Data Visualization**

Tableau, Matplotlib, Seaborn, ggplot2, plotly

**Packages**

Pandas, NumPy, SciPy, NLTK, scikit-learn, dplyr, 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

**Northeastern University**

Liaoning, CN 05/2018

Bachelor of Science

Biomedical Engineering

GPA: 3.8