

Leo (Shide) Qiu

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HIGHLIGHTS

- 7 years of research experience in data analysis and interpretation
- Proficient with Python (PyTorch, TensorFlow, Scikitlearn), R, MATLAB, SQL, JavaScript, BI tools, AWS, and GCP
- Comprehensive understanding of version control systems (Git workflow and GitHub), Agile, and cloud relational database (RDS)
- 5 years of experience in Data Science and Machine Learning
- 4 years of software development experience
- 4 years of research experience working with business representatives in identifying and implementing opportunities related to process enhancement, performance measures, and reporting
- Strong interpersonal, problem-solving, product analytics, and organizational skills

• EDUCATION

Georgia Institute of Technology - *MSc in Computer Science (Machine Learning, GPA 4.0/4.0)* Aug. 2020 – Dec. 2023

University of Alberta - *MSc in Materials Engineering (GPA 3.9/4.0)* Sep. 2016 – Dec. 2018

Jilin University, China - *BSc in Materials Science and Engineering (GPA 3.9/4.0)* Sep. 2012 – Jul. 2016

SELECTED WORK EXPERIENCE

Full Stack Software Developer/Data Scientist, True Angle Medical Technologies, Edmonton Sep. 2019 – Present

- Developed and deployed full stack web application on AWS with Express and Svelte which collected, analyzed, and rendered data visually
- Built a data pipeline to bring together information from different sources and transformed them into a unified format for streamlined analysis
- Developed a comprehensive business intelligence dashboard, offering detailed insights tailored to customer requirements
- Developed Machine Learning Algorithms for swallow detection and breathing activities classification

SELECTED PROJECT EXPERIENCE

Neural Network algorithm for breathing activity detection May 2023 – Present

- Designed the data collection protocol to obtain the ground truth labeled breathing data and store on AWS S3
- Trained and evaluate different ML algorithms (DT, KNN, SVM, NN) for swallow detection
- Implemented the optimal ML algorithm to the iOS app which improves the swallow detection accuracy 35% and efficiency 50%

Machine learning algorithm for swallow detection May 2022 – Present

- Designed the data collection protocol to obtain the ground truth labeled breathing data and store on AWS RDS
- Data wrangling and feature engineering of time series data and developed 3 extra representative features
- Trained and evaluate different ML algorithms (Logistic Regression, DT, KNN, SVM, NN) for swallow detection
- Implemented the optimal ML algorithm to the iOS app which improves the swallow detection accuracy 35% and efficiency 50%

Hateful memes detection Jan. 2022 – Apr. 2022

- Extracted entity, emotion, race, gender, and age tags from the meme image with FairFace and fused them with meme's text
- Implemented BERT with extracted tags to predict if a meme is hate speech
- Built the text-focused model with accuracy of 67.4%

Pandemic Flu Spread Problem Analysis May. 2022 – Aug. 2022

- Conducted in-depth analysis of the factors contributing to the rapid spread of pandemic flu

- Simulated and analyzed the complexities of vaccine development, regulatory approvals, and equitable distribution during a pandemic
- Analyzed the strain on healthcare systems during a pandemic flu outbreak, emphasizing the challenges faced by hospitals and healthcare facilities

Full stack web and iOS application

Mar. 2020 – Present

- Designed the relational database on AWS to track swallow activities from 150 clinicians' patients
- Developed and deployed application with NodeJS back-end and Svelte front-end on AWS Elastic Beanstalk
- Maintained the web application used by 96 clinics and 150 clinicians in the U.S.
- Developed an automated test suite with Selenium for the web application
- Created an ETL system that pools data from multiple resources and developed QuickSight BI Dashboard for business representatives to make decision

SELECTED RESEARCH CONTRIBUTION

- **S. Qiu[†]**, T-G. La[†], L. Zheng, C. Cho, A.L. Elias, J. Rieger, H.-J. Chung*, "Mechanically and Electrically Robust Stretchable E-textiles by Controlling the Permeation Depth of Silver-based Conductive Inks", **Flexible and Printed Electronics**, 4, 025006 (2019)
- T.-G. La[†], **S. Qiu[†]**, D.K. Scott, R. Bakhtiari, J.W.P. Kuziek, K.E. Mathewson, J. Rieger, H.-J. Chung*, "Two-layered and Stretchable E-textile Sensory Patches for Wearable Healthcare Electronics", **Advanced Healthcare Materials**, 7 (22) 1801033 (2018)
- H.-J. Chung, J. Rieger, T-G. La, **S. Qiu**, "Elastic printed conductors", **US Patent App.** 62/682,022, Issued Jun. 7, 2018