Danrong (Alison) Li

danrong.li@nyu.edu · danrongli · danrongLi · Brooklyn, NY 11201

Education

New York University, Brooklyn, NY 09/2021 – Present

M.S. Computer Science; Expected graduation date: May 2023

Coursework: Algorithmic Machine Learning and Data Science, Statistical and Computational Foundations of Machine Learning, Artificial Intelligence, Human Computer Interaction, Design and Analysis of Algorithms, Principles of Database Systems

Columbia University, New York, NY 09/2019 – 12/2020

M.S. Industrial Engineering

Coursework: Data Analytics, Optimization Models, Stochastic Models, Machine Learning, Analytics on The Cloud, Business Analytics, Financial Engineering, Simulation

University of Illinois, Urbana-Champaign, IL 09/2015 – 05/2019

B.S. Industrial Engineering with Honors

Coursework: Analysis of Data, Deterministic Models in Optimization, Industrial Quality Control

Research Experiences

New York University Brooklyn, NY 08/2022 – Present

Researcher, Advisor: Christopher Musco

- More Compact Sketches for Sparse Matrix Multiplication

Inky Technology New York, NY 07/2020 – 09/2020

Research Intern

- Constructed a fingerprint-like stylometry feature database with lexical, structural and content properties extracted from email body and header sections to capture senders' unique writing styles
- Evaluated each sender's words' richness standard deviation based on Wikipedia word frequency dataset
- Experimented various feature weights, evaluation metrics and Machine Learning multiclass classification models (Random Forest, Linear SVC, K-Neighbors, Multi-layer Perceptron)
- Communicated weekly progress with company executives through reports and presentations

Mayco Industries Granite City, IL 09/2018 – 12/2018

Senior Design Research Project

- Performed Python Text Mining with production information to pinpoint major reason for machine downtime
- Created Tableau visualizations to determine the optimal initial feed vendors for Mayco Industries

University of Illinois Urbana-Champaign, IL 03/2017 – 08/2017

Researcher, Advisor: Randy Ewoldt

- Built Yield-Stress Fluid design database to allow users to select materials with desired rheological properties
- Developed a matrix of reported Yield-Stress values and tip diameters during extrusions for 3-D printing applications
- Contributed to manuscript: Rauzan, B. M., Nelson, A. Z., Lehman, S. E., Ewoldt, R. H., Nuzzo, R. G., Adv. Funct. Mater.2018, 28, 1707032.

Relevant Projects

Input Face Image to Output Similar Faces Brooklyn, NY 01/2022 – 05/2022

Artificial Intelligence Class Project

- Integrated pre-trained VGG19 model with unsupervised K-Nearest Neighbor model to create baseline
- Improved the baseline searching accuracy with Facenet model and Elastic-KNN approach

Web Application to Inquire Complex Database Information Brooklyn, NY 09/2021 – 12/2021

Principles of Database Systems Class Project

- Created Entity-Relation (ER) diagram with 8 entities, 7 relationship sets and 6 business rules
- Translated the ER diagram into relational schema and implemented the schema into a relational database on university-hosted server
- Populated the database with web-scraped data
- Designed user-asked complex inquiries and wrote SQL to retrieve them
- Generated a UI with drop-down menu for better user inquiry experience

How COVID-19 affected people's mobility around the world New York, NY 09/2020

Columbia University Data Science Hackathon, Team Bagel, 3rd Place

- Utilized SQL to obtain mobility reports and hospital confirmed cases statistics from Google BigQuery data warehouse and extracted relevant features to build model inputs
- Web-scraped tweets using Tweepy API from Twitter with keyword COVID-19 and retrieved TextBlob sentiment scores
- Created a prediction algorithm on the next-day mobility with both Linear Regression Model and Machine Learning Models (Random Forest Regressor, Decision Tree Regressor, Gradient Boosting Regressor)

Instacart Grocery Orders Analytics New York, NY 01/2020 – 05/2020

Business Analytics Class Project

- Used 2-segment Weibull Statistical Model to distinguish and identify different user groups for Instacart website in order to customize promotional plans: motivate active consumers, attract new users
- Utilized Linear Regression Statistical Model to capture customer grocery re-order time interval fluctuations in various departments and aisles

Amazon Reviews Sentiment Analysis New York, NY 09/2019 – 12/2019

Data Analytics Class Project

- Processed, filtered and solved the imbalance of Amazon food reviews dataset
- Used Valence Aware Dictionary and Sentiment Reasoner (VADER) to analyze and give scores to reviews
- Created WordCloud visualizations to showcase discrepancies between VADER-reasoned review scores and customer-judged scores
- Created a more reasonable scoring algorithm with machine learning models (Logistic Regression, Ordinal Regression, Long-Short Term Memory, Multinomial Naïve Bayes)

Web Application with Open Source Squirrel Data New York, NY 09/2019 – 12/2019

Python Class Project

- Created a web application with Django framework and deployed through Google Cloud Platform with functions of importing, exporting, viewing and editing squirrels' characteristics, including habits, gender, age
- Used JavaScript library Leaflet and OpenStreet map data to construct an interactive map with squirrels' locations

Technical Skills

- **Programming Languages:** Python, C++, Scala, SQL
- **Web/Software Tools:** Google Cloud Platform, Amazon Web Services, Django, Anaconda
- **ML/Analytics:** Scikit-Learn, TensorFlow, Keras, Spark, Hadoop, PySpark, SciPy, Pandas, NumPy, NLTK

Honors Certificates

New York University Graduate School of Engineering Scholarship 09/2021 – Present
Bernt O. Larson Project Design Award 04/2019
Richard Baxendale Outstanding Junior Award 04/2018

Illinois Leadership Certificate 11/2017
Lean Six Sigma Green Belt Certificate 11/2016

Professional Affiliations

- New York University Tandon Algorithms and Foundations Group
- Industrial Engineering Honor Society (Alpha Pi Mu)
- Engineering Ambassador of University of Illinois Grainger College of Engineering
- Society for Women Engineers (SWE)
- Columbia University Data Science Society