Ziyi Zhao

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EDUCATION

University of Connecticut May 2021 (Exp.)
- MSc in Business Analytics and Project Management
- GPA 4.2/4.3 (Top 1%), Spring 2020 Scholarship, Grace Hopper Celebration Scholarship

University of Nottingham June 2019
- BSc in International Business Economics
- First Class Honors, GPA 3.8/4.0, Rank 4th/334, Provost's Scholarship (Top 1.5%)

Massachusetts Institute of Technology on edX Credentials
- Micro Masters in Statistics and Data Science
- Coursework: Probability, Statistics, Machine Learning using Python, Data Analysis for Social Science

RESEARCH EXPERIENCE

Graduate Data Consultant | Travelers 2020 (ongoing)
- Collaborate with personal insurance team to analyze relationship between communication & customer behavior
- Report 44-page EDA for 438k+ campaign data and 494k+ population data, extract dynamic behavior changes
- Build logistic regression models with multiple objectives, conduct external research and design A/B testing
- Recommend on short- and long- term communication strategies, present results to VPs and senior directors

Research Assistant | University of Connecticut 2020 (ongoing)
- Assist Prof. Peng Jing and Hongfei Li in research project on images classification of cosmetic surgeries
- Crawl over 100 GB image data from online diaries, a novel form of electronic word-of-mouth (eWOM)
- Manually label 6000+ surgery images for and build deep learning models on Google Cloud platform
- Identify the patients' pre- and post-surgery stages including before, wounds, swelling, bandages, outcome, etc.

Research Consultant Intern | iResearch Consulting Group 2019
- Generated user experience reports and proposed product improvement suggestions through customer reviews
- Completed the whole research process by questionnaires designing, testing, programming, publishing, monitoring
- Collected 1200 valid questionnaires using Computer-Assisted Telephone Interview (CATI) method
- Ingested and summarized questionnaire results, provided research reports, and provided clients with improvement suggestions regarding mobile phone design, user experience, battery life, call signal, entertainment, etc.

Research Assistant | Peking University 2018
- Assisted Professor Junjie Xia to visited 268 enterprises to conduct questionnaires about the outcomes and influences of industrial upgrading and structural transformation of manufacturing sectors in China
- Overcame challenge of confidential information by suggesting communications with multi-level governments
- Recovered the greatest number of valid questionnaires and was awarded the Outstanding Achievement Award

Research Assistant | University of Nottingham 2016
- Assisted Economics department to research on the impact of China's poverty alleviation policies on the living standards of people in 8 impoverished areas in Jiangxi Province, China
- Designed and collected 1,000+ questionnaires by visiting local universities, government workers, and residents
- Conducted deep interview with residents, and suggested to sell products countrywide via e-commerce live broadcasting to help farmers take the initiative to get rid of poverty

INDUSTRIAL EXPERIENCE

Data Scientist Intern | Global AI, NY, US June 2020 – Aug 2020
- Participated in a team to establish web applications for stock statistics and analyze COVID-19 impacts on stocks
- Deployed interactive application in Python to allow users to specify inputs (time range, tickers, and parameters)
- Assisted in research the impacts of COVID-19 on US stocks and presented insight reports to stakeholders

Data Analyst Intern | Forkaia, CA, US Jan 2020– Feb 2020
- Researched social media popularity by Natural Language Processing to optimize marketing effectiveness
- Organized text by tokenizing, stop-words removing, stemming, lemmatizing, extracted features by TF-IDF
- Trained ML models to report actionable strategies including number of characters, hashtag usage, dynamic and positive content, proper posting time for each day, increased social media followers by 18.2% after 2 months

PROJECTS

E-commerce customer purchasing intention analysis and experiment design (R, JMP Pro)

- Advised by Professor Xinxin Li to analyze customer purchase and raise conversion rate based on web data
- Built logistic regression with interaction terms in R, conducted hypothesis testing to generate suggestions
- Proposed two-stage digital experiments (DID, improved by A/B testing) to measure the outcomes of suggestions
- Expanded analysis by predicting possible buyers, processed data by imputation, transformation, binning, etc.
- Optimized decision tree (sensitivity = 80.84%) and suggested regarding association rule & price discrimination

Recommendation Engine for investment platform Appreciate – Finalist of the data challenge (Python)

- Built recommendations for customer and market based on demographics, risk appetite, portfolio, y-finance data
- Developed cosine similarity algorithms to find similar customers and recommend based on their portfolios
- Created a dynamic efficient frontier algorithm to iterate over securities to increase Sharpe ratio of portfolios

E-commerce platform movie consumption and recommendation engine design (Spark)

- Identified Amazon Prime movies popularity factors and suggested movie recommendation by Apache Spark
- Processed data by encoding and scaling, visualized data by Seaborn; Implemented regularized regression and random forest (depth = 19); Built ETL pipeline and conducted OLAP, used ALS model for recommendations

The reaction of social media on COVID-19 (SAS, R)

- Conducted text mining and sentiment analysis based on the 60-day discussion of COVID-19 on Twitter
- Researched user reaction with the epidemic over time, found tweets that tend to attract more engagement
- Combined with US cases of diagnoses and deaths to recommend on social media users and media platforms

Online reviews analysis of Amazon and topic modeling (Python)

- Clustered online reviews on Amazon watch products and discovered latent semantic structures
- Processed review text, reduced dimensionality by PCA, trained clustering and Latent Dirichlet Analysis
- Identified latent topics and keywords and generate product improvement and innovation suggestions

Big data analytics of Seattle crime (Spark)

- Performed spatial and time series analysis for a 12-year dataset of reported incidents from Seattle Police
- Built data processing pipeline based on Spark RDD, Data frame and Spark SQL for Big data OLAP
- Projected K-means results on Seattle map to study high crime reasons to suggest for police and residents

Financial fraud detection and alert system design (Python)

- Developed ML models to detect fraudulent transactions, built alert system to prevent fraudulent activities
- Performed EDA on 138K+ data, handled imbalanced data by SMOTE, built models with cross validation
- Designed alert system to prevent fraud by categorizing fraud probabilities into pass, investigation, and decline

TEACHING

Graduate Teaching Assistant at University of Connecticut

- OPIM 5604 Predictive Modeling (graduate level, Spring 2020, Fall 2020, Spring 2021)
- OPIM 5603 Statistics in Business Analytics (graduate level, Spring 2020, Fall 2020, Spring 2021)
- Instructed and helped 100+ graduate students on R programming, Statistical Modeling, Hypothesis Testing, Predictive Modeling, Machine Learning, SAS JMP Pro, etc.
- Held office hours, provided exam review sessions and exercises, and evaluated performance of students

English Teacher at New Oriental Education & Technology Group Inc.

- Taught English for middle & high school students, summarized teaching notes of 60,000+ words (2016)

Voluntary Teacher at Mountain Village Primary School in Nepal

- Taught English, Chinese and science, crowdfunded 3,000 yuan to donate chemical laboratory equipment (2016)

AWARDS & HONORS

University of Connecticut

- 2020 Spring Scholarship (Top 5 academic performance, 2020)
- Grace Hopper Celebration of Women in Computing Scholarship (GHC 2020)

University of Nottingham

- Provost's Scholarship (Top 1.5% academic performance, 2019)
- Outstanding Graduate (Top 4% academic performance and extracurricular activities, 2019)
- Inspirational Women Awards (Inspirational contribution to the university, 2019)

- Outstanding Student (Top 5% academic performance and extracurricular activities, 2018)
- Dean's Scholarship (Top 10% academic performance, 2017)
- Outstanding contribution to Peer Mentor program (Guidance and assistance to peers, 2017)

Social organizations

- Tableau Desktop Specialist Badge and certification (2020)
- Champion team of ICAEW International Business Case Competition (2019)
- Outstanding Achievement Award by Institute of New Structural Economics, Peking University (2018)
- Outstanding Volunteer for the 3rd Global SME Summit by Global Alliance of SMEs (For holding a Sharing Economy Conference, 2017)
- Outstanding Teaching Volunteer of the primary education of children in village of Nepal (2016)
- Outstanding Volunteer in teaching and environmental protection in Indonesia (2016)

COURSEWORK

Graduate:

Web Analytics, Data Mining and Business Intelligence, Statistics in Business Analytics, Big Data Analytics with Hadoop, Business Decision Modeling, Probability, Predictive Modeling, Machine Learning with Python, Advanced Business Analytics and Project Management, Data Analysis in Social Science

Undergraduate:

Advanced Calculus, Quantitative Methods I & II, Econometrics & Applied Econometrics, Data Science: Big Data Analytics, Microeconomics I & II, Macroeconomics, Economics of Pricing and Decision Making, Public Economics, Economics of Innovation & Organization, Industrial Economics I & II: Games and Strategies, Economics of Corporate Strategy, Marketing Management, Financial Management

SKILLS

Programming Python, R, SQL, SAS, Stata
Analytics Techniques Classification and Regression Trees, Linear Regression, Regularization (Lasso, Ridge), PCA, Boosted Tree, Random Forests, KNN, Naïve Bayes, Neural Network, Clustering, Ensemble Model
Statistics Analysis Hypothesis Testing, Text Mining, Time Series Analysis
Software and Tools Apache Spark, Hadoop, Hive, Pig, AWS, Oracle, SAS Enterprise Miner, JMP Pro, Tableau, Power BI, Lucid Chart, SPSS Modeler, MS Project, MS Visio, Advanced Excel, Analytic Solver
Language English, Mandarin, French