Manli Zhao

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EDUCATION

Master** of **Science** in **Data Science, New York University *Dec. 2023*

Bachelor** of **Science** in **Data Science, University of Michigan *Aug. 2019–May 2022*

GPA: **3.84/4.0**; **University Honors** 2019, 2020, 2021; James B. Angell Scholar

- Relevant Coursework: ***Data Mining, Machine Learning, Database Management Systems, Web Systems, Probability Theory, Linear Algebra, Applied Regression Analysis***

RELEVANT SKILLS

- **Programming Languages:** Python | SQL | R | C++ | Java | HTML | CSS | JavaScript
- **Libraries:** NumPy | Pandas | Scikit-Learn | Matplotlib | Seaborn | Pytorch | SciPy
- **Software:** Jupyter Notebook | Google Suite | Git | SPSS | LaTeX | Stata | Tableau | Microsoft Access

PROFESSIONAL EXPERIENCE

Meituan.com Beijing, China

***Business Analyst** Intern in **Digital Advertising** Department* *May 2021–Aug. 2021*

- Applied and tuned **optimized K-means model** with **Random Partition initialization** to **categorize** city markets based on business potential features, forming clear breakdown to guide business development.
- Streamlined and automated **Ads performance analysis report** to dynamically monitor monetization efficiency, saving team **8 hours** manual work per week.

Shopee.com Shenzhen, China

***Analyst Intern** in **Strategy** and **Market** Department* *Jul. 2020– Sep. 2020*

- Analyzed questionnaires and **initialized hypotheses** on **correlation between cover image and sales performance**.
- Conducted **A/B testing** to evaluate page views and **click-through-rate** of cover images in differing styles, resulting in **20% boost in CTR** and **25% increase in sales**.
- Performed **hypothesis testing** and calculated p-value, compared it with predefined alpha to show the statistical significance between test groups to validate the A/B test results.

PROJECT EXPERIENCE

Text Sentiment Classifier to monitor Reddit comments *Jan. 2022–Apr. 2022*

- Transformed documents into **feature vector**; trained **kernelized SVM** model and fine-tuned the model using **grid search**; selected model using **5-fold cross validation** under Accuracy, AUROC performance.
- Improved binary **bag-of-words** model using **TF-IDF** score; extended features using **Next Word Negation** technique.

Image Classification: Classify dog images by breed *Jan. 2022–Apr. 2022*

- Implemented and trained **deep neural network** of own designed; using **early stopping** to prevent **overfitting**.
- Visualized what **CNN** has learned using **Grad-CAM**, identified noisy background feature was being learned by model.
- Reused the **pre-trained model** trained from larger dog dataset to initialize weights; **Augmented data** by applying **rotation** and **grayscale**, and final model achieved better accuracy and learned dog related features.

Instagram Clone: Full Stack Web App *Jan. 2022–Apr. 2022*

- Developed a dynamic Instagram clone that utilized **Python Flask** backend**, SQLite database. ReactJS** frontend and **AJAX** calls to custom **JSON-based REST API**.
- Created **shell scripts in bash** to allow programs run easily; deployed production build to **AWS EC2 instance**.

Creating Social Media ETL pipeline *Jan. 2021–Apr. 2021*

- Designed **relational database** to store metadata for a fictional social media platform using **Oracle DBMS**.
- Utilized **Java** program to connect database using **JDBC**; executed queries and placed results in **Java data structures.**
- Extracted records in **Oracle database** to JSON and load to **MongoDB**; calculated aggregate value using **MapReduce**.

Machine Learning Analysis in Financial Applications *Jan. 2021–Apr. 2021*

- Constructed models to predict 10-minute **forward return** given historical minutely prices of three assets over one year using **R**, utilizing **linear regression, KNN, Ridge, Lasso**.
- Improved model by deriving new features then running **Principal Component Analysis**, increasing **out-of-sample correlation** between prediction and true response by **6%.**