

Xiaoyu Liu

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EDUCATION

University of Wisconsin Madison

Master of Science in Data Science (GPA: 3.91/4.00)

Madison, WI

Sept. 2020 - May 2022

Hunan University

Bachelor of Science in Statistics

Changsha, China

Sept. 2016 - Jun. 2020

INTERNSHIP EXPERIENCE

Data Developer Intern

Windriver

July 2021 –

California, US

- Develop and deploy data preprocess functions and data migration functions on AWS EC2, improving the efficiency of BI team by 5 hours per person per month.
- Build automatic ETL pipelines for Snowflake database. Retrieve XML format data with API calls, parse to structured data and send to S3 bucket. Load and transform in Snowflake with SQL.

Data Mining Intern

Saint Gobain

Jun. 2020 – July 2020

Shanghai, China

- Construct ETL process. Extract manufacturing data through mining and clawing methods from reports in Python. Complement data wrangling and transformation.
- Create and manage data model to store collected data.
- Build pipeline to integrate newly collected data with historical data and store in Oracle automatically.

Data Product Management Intern

Lufax

Dec. 2019 – May 2020

Shanghai, China

- Develop demo function of abnormal detection on time series data to automatically produce detection report. Increase the efficiency of producing abnormal report by 3 hours per person per day.
- Design retention analysis function and funnel analysis function.
- Participate in designing website for data warehouse managing.

COMPETITIONS AND RELATED PERSONAL PROJECTS

Streaming Data Analysis with Big Data Engine | *Spark+Kafka+Airflow+AWS*

July 2021 – Aug. 2021

- <https://github.com/XiaoyuLiu198/Streaming-Data-Analysis>
- Set up Kafka topic and feed raw twitter JSON data into Kafka cluster from Twitter API.
- Build ETL process. Preprocess data using Spark SQL functions and window operation. Store data with AWS S3.
- Build machine learning pipeline with user defined function and LDA in pySpark.
- Develop dashboard showing analysis result with Python dash.
- Deploy ETL tasks and machine learning pipeline with Airflow.

Stock Data Pipeline Construction on AWS | *AWS+Java*

Aug. 2021 –

- Retrieve stock data with REST api. Put records to AWS kinesis.
- Parse stock data and analyze with AWS Lambda.
- Store processed structured data in AWS S3 bucket. Visualize with Amazon Athena and Quicksight

Test Answer Prediction(Kaggle top 18%) | *Python*

Dec. 2020 – Jan. 2021

- Preprocess the historical performance of over 100 million students in Riid lab and the metadata about the questions and the lectures. Create features on user-level and content-level.
- Transform and group tags using truncated SVD. Predict the probability of answering correctly using LightGBM.
- Predict the accuracy of answer in Self-Attentive-Knowledge-Tracing model.
- Embed the prediction using bagging method. Reach accuracy of 0.785.

Jane Street Market Prediction(Kaggle Silver Medal) | *Python*

Jan. 2021 – Feb. 2021

- <https://www.kaggle.com/xiaoyuli123123/xgboost-mlp-for-beginners>
- Analyze real stock market data larger than 5GB with billions samples.
- Carry out exploratory analysis and preprocess numerical values with feature scaling.
- Build Autoencoder and feed encoded data to Multilayer Perceptron. Tune hyperparameters of max-depth and learning-rate in XGBoost and train data with cross validation to avoid overfitting.
- Embed the prediction from XGBoost and MLP. Reach accuracy of 0.762.

TECHNICAL SKILLS

Languages: Python, SQL, Java, Scala, R

Platforms: Spark, AWS, Kafka, Tableau

Libraries: matplotlib, ggplot, sklearn, tensorflow, pytorch, keras, dplyr, tidyverse, pandas, numpy