ZEXIN (BARRY) XUE

zexinxue@cs.toronto.edu ⋄ linkedin.com/in/barry-xue ⋄ barry0121.github.io

OBJECTIVE

A computer scientist specializes in algorithmic research and technologies that enable efficient model training and inference at scale. Seeking research internship related to machine learning engineering.

EXPERIENCE

Undergraduate Research Developer September 2022 - June 2023
Henry Abarbanel Computational Biophysics Lab @ UCSD *San Diego, CA, USA*

- Redesign existing neuron simulation script based on the RBF network with PyTorch, enabling GPU parallel computation for data-heavy experiments, which lowers total runtime from 25 hours/trial to 10 hours/trial.
- Produce novel implementation of False Nearest Neighbor algorithm to expedite the search for state variables, lowering the number of trials required to reach an optimal solution by 10x.

Data Warehouse Engineer Intern June 2022 - August 2022
Personalis *Menlo Park, CA, USA*

- Responsible for developing and maintaining ETL pipeline, processing GBs scale data between on-site SQL server and Google BigQuery.
- Utilize Google Cloud's Dataflow and PySpark ML to create a time series prediction model along with a recommendation system to suggest underutilized table for the business analysis team.

Risk Scoring Model Analyst Intern July 2021 - September 2021
FICO China *Beijing, China*

- Build ready-to-use credit score model with Java-based modeling tool with 1000+ real consumer data for client banks and agencies.
- Experiment with popular models (Random Forest, SVM, Feed Forward Neural Network, etc.) to increase accuracy by over 10%, and generate report on model performance for client facing presentations.

RESEARCH & PROJECTS

Autoencoder-based Graph Recurrent Generation September 2022 - December 2022
Incorporate the Graph Recurrent Neural Network (GRNN) framework with two custom training procedures, Wasserstein GAN and Autoencoder, present our finding at the annual Data Science conference to industry professionals from Qualcomm, Deloitte, etc. (Website) (Code)

ML-enabled Image Captioning Web Application September 2023
Extended ML functionality of the open-source Flask application, Albumy, by incorporating BLIP image captioning model to automatically generate captions for pictures uploaded by users. (Code)

EDUCATION

Master of Science in Applied Computing, University of Toronto September 2023 - January 2025
Relevant Coursework: Neural Network and Deep Learning, Knowledge Representation and Reasoning, Software Engineering for ML, Automated Reasoning, Computer Geometry and Animation..

Bachelor of Science, Data Science, University of California, San Diego 2019 - 2023
Relevant Coursework: Recommendation System, Relational Database, Salable ML System, Probabilistic ML, Signal Processing and Analysis, Introduction to ML, Senior Project in Graph Neural Network.

SKILLS

Programming Languages & Tools	Python, Java, SQL, BigQuery, Dataflow, Dagster, Selenium.
ML Frameworks	PyTorch, TensorFlow, Spark ML, Scikit-Learn.
Language	English, Mandarin.