

Liqin Zhang

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EDUCATION

Columbia University
M.S. in Electrical Engineering

New York, NY
Sep 2021 - Dec 2022 (expected)

Shanghai Jiao Tong University
B.S.E in Electrical & Computer Engineering

Shanghai, CN
Sep 2017 - Aug 2021

Massachusetts Institute of Technology
Research Oriented Educational Program

Cambridge, MA
Jan 2019

PROFESSIONAL EXPERIENCE

Software Engineer Intern @ Wish

Mar 2021 - Jun 2021

- Collaborated with Marketplace Payments team to develop a **Restful micro-service** to manage merchant accounts and explored solutions on **micro-frontends** to give system better scalability and make codebase more manageable.
- Processed millions of payment records with **SQLAlchemy** to extract and analyze bad payments such as inconsistent rewards or fines and apply patches, wrote unit tests with **pytest** to help achieve over **87%** line coverage.
- Initiated new features on Frontend with **Vue**, turned duplicated codes into reusable components and APIs.

Engineering Intern @ AMD

Dec 2019 - Jul 2020

- Built a web application with **Flask, Django and Bootstrap** for data validation, cleaning and daily report generation based on 10,000+ records of data from AMD's EDA flow before entering into data warehouse.
- Prototyped a **bash/perl script loader** used across the DevOps, Hardware and Software Engineer teams to retrieve specified **event logs** from millions of database records, boosted data transfer efficiency among teams by **45%**.

PROJECTS

Style Recognition Module for Intelligent Poster Generator

- Collaborate with HUAWEI User Centered Design team to create a frontend interface with **Vue** and animation engine **Three.js**, and set up back-end framework with **Flask** and **Tencent cloud services**.
- Led and mentored inexperienced team members to train inference model for text recognition module using **BERT**, and achieved 71% Top-1 and 94% Top-5 accuracy on **Yahoo Answers Dataset**.

Mini-Unix Shell and Mini-MongoDB

- Implemented an **unix shell in C**, supported redirection, pipeline, built-in functions, quote syntax, signals, error handling and background jobs.
- Implemented a **multi-threaded database** like **MongoDB**, supported reading queries, executing tasks in parallel, creating and destroying threads, synchronizing threads with mutex and error handling.

Multi-Agent Pac-Man Game

- Implemented multiple agents in Pac-Man centered on **Dijkstra, Uniform cost, A* searching** algorithms; evaluated and optimized agents' decision using **Minimax, $\alpha - \beta$ pruning** and other game theory algorithms.
- Utilized **Hidden Markov Model** and particle filtering to update belief distribution to predict agent position.

Efficient Sampling based on Incremental Active Learning (with Dr. Xiaofeng Gao)

- Processed Cervical Cancer Dataset on Alibaba Cloud, used **Gaussian blur** to highlight key illness factor, cropped and resized images to several scales for more features, originated **Pseudo labels** for test dataset.
- Implemented **entropy sampling** algorithm on true positive samples to select the most informative candidates to **actively and incrementally** fine tune model, and improved AUC score by 3.7%.

AWARDS

Commodity Data Mining: Exploration on Amazon Product Ratings & Reviews
The Mathematical Contest in Modeling 2020 - Meritorious Winner (Top 6%)

Mar 2020

- Analyzed customers' reviews with **NLTK** to extract sentiment scores, constructed time-series scoring model and applied marked point process model on product ratings to evaluate influence.

TECHNICAL SKILLS

Languages Python, C/C++, Java, Ruby, R, SQL, HTML/CSS, JavaScript, \LaTeX

Frameworks Flask, Django, Vue.js, Ruby on Rails, Bootstrap, Numpy, Pandas

Technologies Webpack, Hadoop, Spark, AWS, GCP, Nginx, Redis, MongoDB, PostgreSQL, Neo4j, Docker, Git