

Xiaotian Zou

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EDUCATION

University of California, Davis

Sep 2019 — Mar 2021(expected)

Master in Computer Science (GPA: 3.74/4.0)

Core modules include *Theory of Computation, Computer Architecture, Networks, Distributed database system, Computer Graphics, Information Visualization, etc.*

Course Projects during study:

- Developed a VR map visualization application using **Unity**.
- Re-implementation of a visualization paper. Mainly worked on building the back-end system with **Django**.

Sun Yat-sen University

Aug 2015 — Jun 2019

Bachelor of Software Engineering (GPA: 3.7/4.0)

Core modules include *Data Structures and Algorithms, Operating System, Computer Networks, Database system, Linear Algebra, Web 2.0 Programming, Modern Operating Systems Application Development, Multi-core Programming, etc.*

Course Projects during study(selected):

- An android application named "Sports Expert". Worked on back-end development with **Express.js**, also finished part of the front end design with **Java**
- A dormitory management helper system running on Windows 10. Worked with **C#**
- A mini game "Tank glory" developed with **cocos2d**
- A simple voting system based on Ethereum framework. The front-end is implemented with **Vue.js**

PROFESSIONAL EXPERIENCE

Research Assistant

Feb 2020 — Oct 2020

University of California, Davis, US

Mainly worked on bio-related machine learning projects, involving single cell data and brain signal processing. Implemented in **TensorFlow2** and **R**

- Implemented a Transformer model to capture the inner relations within stimulus and the brain responses. Proposed a method to accelerate the training speed **20** times.
- Designed a pre-processing pipeline that could better preserve the information from the single cell data set.
- Built a multitask auto-encoder to be trained on finding the relationships across drugs and the corresponding gene expressions.

Natural language processing Intern

Feb 2019 — May 2019

Tianpeng Computer Technology Co.ltd, Guangzhou, China

Worked on processing and classifying drug and medical text data. All codes were implemented in **Python**.

- Set up several **web crawlers** to extract drug/medical information from over **150** web pages.
- Established a **regular expression** based pipeline to extract key information from over **500** extremely muddled raw text files.
- Built a BERT based multi-label model to classify the symptom descriptions with the diagnosis labels.

Research Assistant

May 2017 — Nov 2017

Sun Yat-sen University, China

Developed an application that can help users to automatically filter and present the important information in WeChat. Implemented in **Python** and **Vue.js**

- Used SQLCipher to crack WeChat local database. Also proposed to apply web crawlers to gather group chat information through the web version of WeChat.
- Participated in part of the front-end coding for information presentation.
- Established a simple natural language processing model to classify the information importance.

SELECTED PROJECTS

Quantitative Trading Strategy Development

Apr 2018 — Nov 2018

GF Securities, Guangzhou, China

Aimed at developing a quantitative trading strategy that can advise customers to buy/sell stocks based on small amount transaction. Implemented in **Python**.

- Developed a recurrent reinforcement learning model to generate transaction advice, along with a LSTM model to predict stock price. The model surpassed the traditional linear regression model by 5%.
- Established a CNN to testify the feasibility of predicting stock price from the K-line diagram.

Activity Arrangement System

Oct 2018 — Nov 2018

Sun Yat-sen University

Course Project. Aimed at implementing the system design knowledge and develop a web application to help users arrange multiple activities. The code was implemented in **Vue.js**.

- Was the leader of a 7 people group. Responsible for doing system design analysis using **UML**.
- Implemented part of the front end pages, containing sign in/up page and QR code check-in page.
- Helped design the back-end system including the architecture of the database, which was based on MongoDB.

PUBLICATIONS

Causality Extraction based on Self-Attentive BiLSTM-CRF with transferred Embeddings

- The third author, mainly worked on data preprocessing.
- The paper is currently available at <https://arxiv.org/pdf/1904.07629.pdf>.

PROFESSIONAL SKILLS

Programming Languages

Python, JavaScript/ Node.js, C++, C#, Java, R, HTML5, CSS, SQL

Web Development

Vue.js, Django, MongoDB, Express.js

Machine learning library

TensorFlow 2, Keras, scikit-learn

Other tools

Linux, Postman, Slurm, SSH, Git