Xiaotian Zou

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EDUCATION

University of California, Davis Sep 2019 — Jun 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