ZOU XIAOTIAN

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

Course Projects during study(selected):

- Participated in developing a check-in application with QR code with **Vue.js**
- An android application named "Sports Expert". Worked on back-end development with **Express**
- A dormitory management helper system running on UWP. Worked on the front end part 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 — Current

Univeristy of California, Davis, US

In Dr.Gerald Quon's lab, I mainly worked on bio-related machine learning projects, involving single cell data and brain signal processing. Implemented in **Tensorflow2** and **R**

- Implemented Transformer model to capture the inner relations within stimulus and the brain responses.
- 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.

- Built a BERT based multi-label model to classify the symptom descriptions with the diagnosis labels.
- Set up several **web crawlers** to extract drug/medical information for further building of knowledge map.
- Established a **regular expression** based pipeline that can clean and restructure the muddled raw text data set.

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.
- Established a CNN to test the feasibility of predicting stock price from the K-line diagram.

Wechat Information Integration Application May 2017 — Nov 2017

Laboratory of Computerized Medical Imaging and Graphics, Sun Yat-sen University, China

Aimed at developing an application that can help users to automatically filter and present the important information in group chat. 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 design.
- Established a simple natural language processing model to classify the information importance.

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, MySQL
Machine learning library	Tensorflow 2, Keras, scikit-learn
Other tools	Linux, Postman, Slurm, SSH, Git