Mingzhi Zhu

*School of Software Engineering, Tongji University Siping Road,Yangpu District,Shanghai,China*

*Curriculum Vitae*

 zmz.mzzhu.com  [zmzfpc@tongji.edu.cn](mailto:zmzfpc@tongji.edu.cn)  github.com/zmzfpc  +8619946254050

# EDUCATION

## Tongji University Shanghai, China

### *B.Eng. in Software Engineering Expected Graduation: June 2022*

GPA:4.48/5(89.8/100),Advanced GPA:4.82/5(93.2/100)

Relevant Coursework: AI and Business Intelligence, Data Mining, Human-Computer Interaction, Calculus, Data Warehouse, GIS Introduction, Memory Databases, Software Testing, Principle of Compiler, Design Pattern, Java EE Programming, Software Engineering Economics, Discrete Math- ematics, Probability and Statistics, Data Structures, Algorithm Design And Analyss, Software Engi- neering et al.

# RESEARCH EXPERIENCE

## Financial Network Risk Measure and Prediction Tongji Univ, Shanghai

### *Advisor: Prof.Dawei Cheng, School of Computer Science Apr. 2021 - Nov. 2021*

* I used content-based intelligent crawler to get three core data(assets,liabilities,buffer) and five operating indicators of 150000 banks in the world.
* I refactored simulation algorithm in Python to improve the network generation algorithm using Segment Tree, greatly increasing the speed of generating simulated networks.
* I used graph neural network combined with the interbank network to simulate the ability of other banks to resist crisis when one bank has a credit crisis.

## Bus Drivers Behaviors Perception Jiading Bus Co&Tongji Univ, Shanghai

### *Advisor: Prof.Yu Shen, School of Transportation Information Nov. 2020 – Jun. 2021*

* I used Keras to build a deep convolutional neural network for driver action perception.
* I used two optimizers, Adam & RMSprop, to train the model step by step and set the Dropout layer to optimize the training results and reduce overfitting.
* I used activation class diagram to visualize the output of the model perception results.
* I used decision tree models, combined with OCR and other technologies,to identify spatio- temporal information in the video.

## E-commerce Recommendation Attack Identification Univ of Technology Sydney, Sydney

### *Advisor: Prof.Ying Zhang,School of Computer Science Sep. 2021 – Oct. 2021*

* Focus on user-item click records.
* Click records was provided by a kafak message queue, and I applied xgboost algorithm to dichotomize user product click records.
* I packaged the model and workflow as a docker image to be deployed on the cloud server.

# HONORS & AWARDS

* Meritorious Winner of the Mathematical Contest in Modeling,COMAP, 2021 **(Top 7%)**
* National Second Prize in Mathematics competition of Chinese College Students,Chinese Mathematical Society, 2020 **(Top 3%)**
* Social Activity Scholarship,Tongji University, twice, 2019&2020 **(Top 5%)**
* First-Class Scholarship, Tongji University, 2019 **(Top 5%)**

# PROJECTS

**Codepass Cloud Code Q&A Community** *Oct. 2020 -Dec. 2021*

* The project is a question and answer community with the theme of solving code problems.
* The project is implemented based on Docker containers, and each question asked by the user provides a docker container for simulating the user’s environment.
* The front-end of the project is implemented based on the React framework.
* Using Redis as a data cache, some hot data is stored in Redis, and when it’s needed, it’s taken directly from memory, greatly improving speed and saving server overhead.

**Film Information Storage System** *Sep. 2020 – Jan. 2021*

* 250,000 pieces of movie data were obtained from Amazon.com using a crawler.
* Use Hadoop to build a distributed system to store data.
* Examine the performance of a data warehouse built using hadoop, by comparing it with a relational database(mysql) and a non-relational database(neo4j).

**TV Drama Recommendation System** *Apr. 2021 – Jul. 2021*

* The data for the project is the TV program viewing history of 26,000 subscribers in a city, as well as some information about these programs.
* The project implemented two recommendation algorithms DKN and NRML in the PyTorch framework based on the methods provided in the existing papers.
* Use Tensorboard to display training results in a dashboard and compare this result with the traditional algorithm such as ALS.

**Entity Information System** *Feb. 2021 – Apr. 2021*

* The knowledge graphs in this project are derived from publicly available financial datasets provided by Reuters.
* The project implements data pre-processing and storage, provides basic read, import, and storage functions for data sets, through the Neo4j graph database.
* The project implements a relational query between one and multiple companies/individuals in the dataset and presents it in a visual way.
* The project implements a custom scoring system for companies/individuals based on the association between companies/individuals and corporate information.

**Map of Shanghai Cultural Enterprises** *Mar. 2021 – Jun. 2021*

* Developed a dynamic map of Shanghai based on Arcgic API.
* The front-end is built using Vue framework, supporting the show/hide of map layers, as well as complex interactive operations such as jumping by clicking, counting the number of cultural enterprises, and predicting the distribution of cultural enterprises.
* The cultural enterprise distribution prediction uses the MaxEnt model, based on the dis- tribution of streets, cultural heritage, economic development index and the distribution of existing cultural enterprises in Shanghai.

# PUBLICATIONS

* **Mingzhi Zhu**, Dawei Cheng, Zixuan Tan,Simulation Network of Global Major Commercial Banks .Scientific Data 2021.(Under review)
* **Patents:**An Interpretable Deep Learning-based Model for Perceiving Bus Drivers Behav- iors.(Under review)

# TECHNICAL STRENGTH

* **Programming Languages:**C/C++,Python,C#,Java,HTML/CSS,Javascript,R,LATEX
* **Platforms:**Linux, Windows, Android
* **Packages & Tools:** Numpy, Pandas, TensorFlow, Keras, PyTorch, Tesseract, Matplotlib, Sklearn, Scipy, MxNet, Git

# ADDITIONAL

* **Sports:** Table Tennis(silver medal in University-wide competition), Soccer(Bronze medal in college league)
* **Volunteer Activities:**”SunShine Home” Service Center for the Disabled, Anting Town, Jiading District, Shanghai, 160 hours of volunteer service.