

Xin JIN

E-mail: xiji@kth.se Tel: 49-15222172168 Gender: Female

Education

Double Master, Autonomous System Direction, EIT, TU Berlin & KTH

KTH Royal Institute of Technology (KTH)

Oct. 2021 - Jun. 2023

Major: Electrical Engineering (Master of science)

Technical University of Berlin (TU Berlin)

Oct. 2021 - Jun. 2023

Major: ICT(Information and Communication Technology) Innovation (Master of Science)

Southwestern University of Finance and Economics

Sep. 2017 - Jun. 2021

Major: Computer Science and Technology

Bachelor of Engineering

GPA: 81/100

Double Degree Major: Financial Management

Bachelor of Management

GPA: 83/100

Honors Degree: Bachelor of Mathematics (Hons)

Publication

Image Dehazing with Uneven Illumination Prior by Dense Residual Channel Attention Network

Aug. 2020

Journal Name: IET Image Processing (ISSN 1751-9659)

Author: Shibai Yin, JIN Xin, Yibin Wang, Anup Basu

Research Experience

Research and design of an emotion-assisted analysis system based on emotion AI - Taking the example of online education

Jan. 2019 - May. 2020

- **National final project of National Student Innovation and Entrepreneurship Program** **Project members**
- Designed and implemented a platform for real-time input of students' facial information and feedback on their learning through computer cameras.
- Responsible for core algorithm design and implementation and design of recommendation models. For example, collaborative filtering, Chebyshev regression, etc.

Deep Learning and Image Processing

Sep. 2018 - Feb. 2020

- **Southwestern University of Finance and Economics** **Research Assistant** **Professor Shibai Yin**
- Read and organized cutting-edge as well as classical literature.
- Designed a feasible deep learning model; debugged the code programming and recorded the results; improved the algorithm design based on the running results.
- Completed a paper as the second author, and published it in IET IMAGE PROCESSING.

Alzheimer's disease course prediction

Jan. 2019 - Oct. 2019

- **Statistical Research Centre, Southwestern University of Finance and Economics** **Research Assistant** **Professor Bin Liu**
- Designed loss function and deep learning model; cleaned and bootstrapped patient DICOM data using Linux shell and Python.
- Completed data pre-processing; Designed and combined residual neural network models with embedded new cross-entropy loss functions for disease course prediction.

Internet of Things and Industry 4.0

Jul. 2022 - Aug. 2022

- **Technical University of Munich (TUM) & Schneider Electric** **Research Member**
- Read the OPC/UA protocol original doc, and designed the solution to integrate legacy devices into OPC/UA platform.
- Designed the logic of an "plug-and-play" app "Rosetta 4.0" which runs on the industries' edge devices, and translated the data into OPC/UA standard.
- Estimated the finance plan and competitor analysis for the app.

Vehicle 2-X: Communication and Control

Apr. 2022 - Aug. 2022

- **C++, omnetpp, Communication Protocol, Computer Network**

Course Essay: <https://www.overleaf.com/read/pjkggfvmkvqs>

Work Experience

University of Cambridge (GEC)

Teaching Assistant

2021

Algorithmic principles of Alpha go: a study of deep reinforcement learning and graph neural networks (GNN)

- Followed and took notes on the professor's lectures and answered questions during office hours.
- Responsible for the teaching classic papers in the field of deep reinforcement learning.
- Followed up on the progress and content of each research group.

Functions of complex variables and their applications

- Followed and took notes on the professor's lectures and answered questions during office hours.
- Taught the derivation of the fundamental theorem of functions of complex variables.

Medicine Group, Tianfeng Securities Research Institute

Intern

Aug. 2021 - Dec. 2022

- Organized minutes of meetings. Main companies: "Yixintang", "Dashenlin" and "Tongrentang Technology".
- Drew charts, collected essential information, and wrote parts of the research reports.

Dynasty Cargo Logistics Limited (DCL)

Technician

Jan. 2020 - Aug. 2020

- Responsible for maintaining and improving the logistics management information system.
- Applied Java and MySQL to modify and designed a more reasonable database relationship for the logistics system.

Sichuan Hwadee Information Technology Limited Company

Development training

Aug. 2019 - Sep. 2019

- Designed and implemented a web-based government information management system using Java language based on Mybatis framework, including JSP web page design, JavaScript information processing, and response interaction between web page and backend.
- Completed the design and programming of processor information security, embedded programming of MySQL database, etc.

Bachelor Thesis

《A BSR-CSR dynamic sparse storage format For Sparse matrix with dense submatrix》

Computer Science Bachelor Thesis

Feb. 2021 - May. 2021

The article suggests a BSR-CSR dynamic block hybrid storage approach for sparse matrix with dense sub-matrices multiplication to improve the operation continuity, and space of sparse matrix multiplication with dense sub-matrices in the calculation process. The purpose of this article is to devise a method for heuristically locating the dense sub-matrices in a sparse matrix. Finding and dividing dense submatrices reasonably into blocks can reduce the frequency of memory visits for sparse matrices that have dense submatrices. The concept of BSR dynamic partitioning matrix is put forth, in order to avoid multiple access to shared memory for a complete row or column caused by discontinuous access. And to equitably allocate the length of shared memory, this concept dynamically allocates the shared memory according to the size of partitioning matrix.

- C++. Nvidia Librarv. Cuda. Sparse matrix Multiplication

《An application and innovation of Clustering in the investment of Broken net shares》

Financial Management Bachelor Thesis

Feb. 2021 - May. 2021

Collective bidding directly influences stock price. Earnings, news, market mood, monetary policy, and public opinion all influence buying and selling. Evaluating events and determining their timeliness is highly challenging. Certain facts may still be reflected in fundamental conditions. The purpose of this article is to investigate the common traits and guidelines of the fundamentals in historical data. The A-share market sotck is more prone to be net-value broken than other global markets. This study examines the rationality, stability, and fair expectationof long-term profitability, for stock selection based on price-to-book ratios<1. 3,727 A-share mainland sotcks are used as the research subject.

- K-means clustering algorithm based on SDTW distance for time series.
- BaoStock Interface, Python 3.8

Competition

Asia and Pacific Mathematical Contest in Modeling (APMCM)

<https://www.overleaf.com/read/fwftwnnkbpgz>

Dec. 2019

➤ **Third Prize**

- Developed and applied a regional economic dynamics evaluation index system.
- Responsible for thesis writing, algorithm designing, and programming.

China Undergraduate Mathematical Contest in Modeling (MCM)

Team Leader

Oct. 2019

➤ **National Second Prize**

- Responsible for time planning, controlling the process and progress of problem-solving, and decision making.
- Learned about physical theory and mathematical differential equations dynamics modeling, such as rigid body dynamics and the Euler angle coordinate system and developed a complete system of concentric ball game analysis.
- Designed the model, built model assumptions, implemented algorithms and wrote the thesis.

National E-Commerce "Innovation, Creation, Entrepreneurship"Challenge Competition for College Students

Group Member

Mar. 2019 - Jun. 2019

➤ **Third Prize**

- Designed emotional AI-based "Touching" learning context-assisted analysis platform.
- Improved and demonstrated the implementation process of integrating technology with the business.

Guanghua Cup Innovation and Entrepreneurship Competition

Group Member

Feb. 2019 - May. 2019

➤ **Third Prize**

- Participated in the project 《"Touching" Learning Contextual Analysis Platform based on Emotional AI Technology》.
- Responsible for financial budgeting and product pricing.
- Designed and forecast the project implementation process.

Honors

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|--|-------------|
| ➤ China Undergraduate Mathematical Contest in Modeling , National Second Prize | Oct. 2019 |
| ➤ Certificate in Mathematics Honors Program | Jan. 2021 |
| ➤ ACM Chengdu Outstanding Undergraduate Nomination (two recommended places in one university) | Sep. 2020 |
| ➤ Scholarship for Scientific Research and Innovation (four times) | 2018 - 2020 |
| ➤ National University Mathematics Competition , Third Prize | Dec. 2019 |
| ➤ Third-class Scholarship | Apr. 2019 |
| ➤ Sport Scholarship (twice) | 2017 - 2018 |

Skills

➤ Computer Skills

Mastered Programming Language: C, Python, Java, Linux Shell, MATLAB, Android Programming, MySQL, Go etc.

Others: Latex, Linux.

➤ Language

English: IELTS 6.5, GRE320

German: Be able to read German textbooks and academic materials in science and technology based on familiarity with the relevant vocabulary.

Take the course "Analysis I for mathematicians" in Germany language and have received the 10 credits in TU Berlin.

Participate the course "Analysis II for mathematicians" taught in Germany(without taking credits)

<https://www.overleaf.com/5369892968fqqxjppfdwwq>