Shibo Zhu (朱世博)

Southern University of Science and Technology

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I am an undergraduate student who have many experience in back-end development, data processing, application of artificial intelligence algorithm, and certain embedded development experience. I have good ability of information retrieval, literature reading and fast learning and am good at communication and create a good cooperation environment to jointly solve problems.

EDUCATION

Southern University of Science and Technology (SUSTech)   *Shenzhen, China*

Bachelor in Computer Science and Technology   *Sept. 2019 - Jun. 2023 (Expected)*

- **GPA:** 3.72 / 4.00
- Supervisor: Xuan Song (Associate Professor)
- First prize of excellent scholarship in 2021
- Third Prize of excellent scholarship in 2020
- Vice President of the University Volunteer Association
- **Courses:**   Data Structures and Algorithmic Analysis, Algorithm Design and Analysis, Computer Organization, Operating System, Computer Networks, Digital Logic, Software Engineering, Object-oriented Analysis and Design, Principles of Database System, Data Mining, Artificial Intelligence, Signals and Systems, Computer Vision, Multimedia Information Processing, Discrete Mathematics, Probability and Statistics

National University of Singapore (NUS)   *Remote*

Summer Workshop   *May. 2022 - Jul. 2022*

- Enrolled Coursework: Artificial Intelligence of Things
- Performance: A-
- Combined with internet of things technology, machine learning and software engineering, a Smart Wardrobe based on temperature prediction and image classification is developed

LANGUAGE

Chinese   Native

English   Fluent; IELTS: 6.5 in total

RESEARCH EXPERIENCE

Personalized Federate Learning of Trajectory Prediction   *SUSTech, China*

Group Leader, Supervisor: Associate Professor, Xuan Song   *Oct. 2022 - Current*

- Introducing Federate Leaning to federate the multi-source trajectories in a distributed, edge-personalized and privacy-preserving manner
- Relevant literature reading, basic code testing, and preliminary research plan

End-to-End Text-to-Poster Generation   *SUSTech, China*

Research Assistant, Supervisor: Assistant Professor, Bo Tang   *Sept. 2022 - Current*

- Aim to design a text-to-poster generation model and corresponding evaluation metrics
- Responsible for the image to text generation process

Emergency Rescue Plan Formulation and Management Method based on Real-Time Hierarchical Division   *SUSTech, China*

Research Assistant, Supervisor: Associate Professor, Xuan Song   *Aug. 2022 - Current*

- Planning of rescue areas under major disasters using data-driven methods
- Participating in patent writing

Performance Analysis of Different Reinforcement Learning Methods in Intelligent Metro Scheduling Optimization

SUSTech, China

Group Leader, Supervisor: Associate Professor, Xuan Song

Mar. 2022 - Jun. 2022

- Leading a team of three to compare the performance of different reinforcement learning methods in the Metro scheduling optimization problem
- Responsible for drafting patents and acting as patent liaison, communicating with patent agents and finalizing details.

Metro Intelligent Dispatching Optimization based on Reinforcement Learning

SUSTech, China

Group Leader, Supervisor: Associate Professor, Xuan Song

Oct. 2021 - Jan. 2022

- Convert the original passenger card reading travel data into OD data that can be used for the RL environment.
- Be responsible for the implementation and application of DQN algorithm on this issue, and propose targeted improvement methods, such as adjusting the network structure, designing new ways to update the return function, etc.

PROJECT EXPERIENCE

Sanxingdui Sacrifice Scene Reproduction with AR Application

SUSTech, China

Multimedia Information Processing

Mar. 2022 - Jun. 2022

- Unity 3D technology was used; Terrain is used to restore the mountains, grasslands, trees and rivers in the scene in a fine-grained way. At the same time, it can also dynamically adapt to the dynamic change of scene granularity at different distances, giving users a better experience.
- EasyAR tool was used to call Android camera to track a single image and display the sacrificial scene on the image of bronze mask.

OCR System

SUSTech, China

Computer Vision

Dec. 2021 - Jan. 2022

- Replaced the database of an end-to-end OCR system with Chinese and retrain
- Some simple ablation experiments were carried out

Online Flea Market of SUSTech

SUSTech, China

Object-oriented Analysis and Design

Sept. 2021 - Dec. 2021

- Responsible for back-end development, using the SpringBoot framework to interact with the front-end (WeChat applet), and responsible for multiple business logic development, such as login, product upload, browsing footprints, etc.
- The development process always follows the principle of "high cohesion, low coupling", which provides great convenience for later function expansion. And use Swagger to automatically generate interface documents, which is convenient for co-development.
- I was responsible for database design, and achieve the separation of user permissions and efficient expression of user data on the premise of conforming to the database design paradigm. Using Mybatis to connect to the postgreSQL database persistently to achieve efficient CRUD.

AI Design of Reversi

SUSTech, China

Artificial Intelligence

Oct. 2021 - Dec. 2021

- Detect and prompt the falling sub points
- The Alpha-Beta pruning search is implemented, and the appropriate evaluation matrix is set for the game rules
- The end-game search strategy and the variable depth search strategy are implemented according to the inter-office status to achieve the optimal performance under the search time limit

Speech Signal Synthesis

SUSTech, China

Signals and Systems

Nov. 2020 - Dec. 2020

- Fourier transform, low-pass, band-pass filter and other operations are used to remove the noise in the environment
- the speech signal is synthesized according to the characteristics of the human ear's perception of sound to obtain a clear and recognizable speech signal

WORK EXPERIENCE

Youth League Committee of Southern University of Science and Technology
SUSTech, China

Student Assistant of the Youth League Committee
Sept. 2020 - Jun. 2021

- Assist the teachers of the Youth League Committee in handling daily paperwork, and use python and other automated tools to complete the information conversion between word and excel files
- During the tenth anniversary celebration, I used python to complete thousands of volunteer information matching, which saved a lot of time.

Zhixin College, Southern University of Science and Technology
SUSTech, China

Teacher of Java mutual aid classroom
Mar. 2021 - Jun. 2021

- Teach junior students basic Java knowledge, as well as classroom homework guidance, and cooperate with colleagues to complete lesson preparation.
- Build a simple static blog with github and hexo, and upload some handouts; Integrate lovely live2D pets for the website.

Volunteer Association of Southern University of Science and Technology
SUSTech, China

Vice President
Sept. 2020 - Sept. 2021

- Mainly responsible for the planning and implementation of large-scale activities and the coordination of relations between various departments; Actively promoted the construction of the project team system.
- Responsible for planning the 2021 U-Action Campus Micro Public Welfare Competition, innovative participation in the double selection mode of excellent activities and group members, and passing on excellent public welfare activities.

SKILLS LIST

Programming	Python (Pandas, PyTorch, Tensorflow, NumPy, Scikit-learn. etc.), Java, C/C++, SQL, Matlab, Unity, JavaScript, HTML, CSS
IDE	JetBrains, Vscode, Anaconda, Jupyter
Miscellaneous	Linux, CUDA, LaTeX, Markdown, Microsoft Office, Git, CAD, SolidWorks, Online Documentation
Soft Skills	Time Management, Teamwork, Problem-solving, Documentation, Engaging Presentation

HONORS & AWARDS

2022	**Outstanding Student Backbone**, May Fourth Award	*SUSTech, China*
2021	**The First Prize (Top 5%)**, Scholarship for Outstanding Students	*SUSTech, China*
2021	**The 2nd Prize**, "Huashu Cup" National Undergraduate Mathematical Modeling Competition	*China*
2021	**Outstanding Volunteer**, Annual Outstanding Volunteer Selection	*SUSTech, China*
2021	**The 3rd Prize**, National Undergraduate Mathematical Modeling Competition (Guangdong)	*Guangdong, China*
2021	**Outstanding Youth League Member, Outstanding Student Backbone**, May Fourth Award	*SUSTech, China*
2020	**The 3rd Prize**, Scholarship for Outstanding Students	*SUSTech, China*
2019	**The 3rd Prize**, Admission Scholarship	*SUSTech, China*

INTERESTS

Guitar	I love playing the guitar, especially fingerstyle guitar, which helps me relax and face challenges in a better state.
Table tennis	Although I did not receive formal training, I played well and could compete with the players of the school team.
Go	It is an interesting intellectual confrontation. I like the feeling of brainstorming and obtained 4 dan grading rank (Amateur).
Volunteering	Volunteer activities let me feel the happiness of helping others. My total volunteer hours are up to 67.8 hours.