

# YINGHAO CAI

Address  
Phone & Email

## EDUCATION

Sept. 2020- Jun. 2024 **School, Southeast University** Nanjing, China  
Artificial Intelligence (GPA: 4.06/4.8, 3.88/4; Average Score: 90.3/100; Rank: 3/94, top 3%)

## EXPERIENCE

In Progress **Identification of Influential Group in Attributed Graph through Explaining Graph Neural Network** Nanjing, China

### Leader

- Analyzed the given problem and designed the research plan to find solutions by modeling the problem as a combinatorial optimization problem
- Adopted the reinforcement learning algorithms and started programming as expected
- Python, Cpp 混合编程

2022 - 2023 **Sparse and Low-Rank High-Order Tensor Regression via Parallel Proximal Method** Nanjing, China

### Member

- The research paper proposed an efficient algorithm to solve the problem of high-dimensional low-rank tensor regression
- Tested the performance of this algorithm in video classification processing with the UCF101 Dataset and assisted in the refining of the research and the paper

Year - **Knowledge Engineering Practice: Diabetic Knowledge Map Construction and Prescription Prediction** Nanjing, China  
Year(2023.3-6)

### Leader

- Made the project plan according to team discussions and the strengths of team members and designed the process of knowledge map construction
- Read a large number of related papers and figured out an algorithm to deal with the thousands of pieces of data on diabetes cases
- Helped the team and other members with data processing tasks such as named entity recognition

Year - **An Extended Study of Knowledge Neurons: Knowledge Neurons in Multilingual Pretrained Language Models** Nanjing, China  
Year(2023.3-6)

### Leader

- Proved the universality of a framework for extracting knowledge neurons presented in the paper *Knowledge Neurons in Pretrained Transformers* and wrote a study report on it
- Designed and conducted experiments independently with multilingual BERT and other multilingual data sets on different language models
- Got familiar with the design and operation of a whole research project and academic paper writing

Year - **Video Caption Challenge Project** Nanjing, China  
Year(2022.9-12)

### Leader

- Extracted the audio and video feature vectors from the given videos with FFmpeg and other models and then used S2Vmodel to generate the tags and form the video caption
- Deepened my understanding of the practical application of deep learning technology and strengthened my skills in using learned knowledge to solve real problems

Year - **Image Segmentation of ARDS Patients' Lung Lesion Area** Nanjing, China  
Year(2022.3-6)

### Member

- Adopted F3Net in our design and tested and improved the model through ablation study to realize improving the accuracy of image segmentation of lesion region
- Explored the application of image processing in the medical field

Year - **Tutor Recommendation System Development** Nanjing, China  
Year(2022.7-8)

### Leader

- Built a website to realize the function of recommending graduation design tutors to undergraduate students, including collecting tutors' information with a web crawler, building the back-end database, designing the front-end interface and search recommendation algorithm, as well as connecting the front and back ends
- Enriched my knowledge of web building and design; self-learned different frameworks like HTML, CSS, JavaScript, and Vue

2021 - 2022 **Superpixel Segmentation Task based on Deep Clustering** Nanjing, China

### Leader

- Adopted and compared two methods (DEC and SENet) to realize the superpixel segmentation; did a lot of research and improvements and presented a report

- Learned from scratch how to design a study project, and how to adjust the research method in time and give clear and logical reports

## **AWARDS**

Year

## **PERSONAL**

**Language Skills:** TOEFL87

**Software Skills:** Python, C++, Matlab; Linux; CSS, HTML, Javascript