

Cheng ZHANG

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EDUCATION

Central China Normal University (CCNU) Wuhan, China
Faculty of Artificial Intelligence in Education 09/2020-07/2024
Major: Bachelor of Engineering in **Artificial Intelligence** Cumulative GPA: 87.15/100
Honors: Merit Student (2022 & 2021), Jingui Scholarship (2022), Shuren Scholarship (2021)
IELTS: 7.5 (Listening-8.0; Speaking-6.0; Reading-8.5; Writing-6.5) 04/2023
GRE: 324 (Verbal-155; Quantitative-169; Analytical Writing-3.0) 07/2023
Areas of Interest: Computer Vision, 3D vision, Generative Modelling

PUBLICATIONS

C. Zhang, H. Liu, et al. [Token HPE: Learning Orientation Tokens for Efficient Head Pose Estimation via Transformers](#). *CVPR*. pp. 8897-8906. 2023.

H. Liu, C. Zhang, et al. [TransIFC: Invariant Cues-aware Feature Concentration Learning for Efficient Fine-grained Bird Image Classification](#). *IEEE Transactions on Multimedia*, doi: 10.1109/TMM.2023.3238548.

H. Liu, C. Zhang, et al. [Affinity Relation-aware Fine-grained Bird Image Recognition for Robot Vision Tracking via Transformers](#). *2022 IEEE International Conference on Robotics and Biomimetics*, 2022, pp. 662-667, doi: 10.1109/ROBIO55434.2022.10011861.

PROJECTS

Patent: A Learning Attention Monitoring Method Based on Transformer
07/2022-09/2022

Patent No.: 202211596338.9

Supervisor: Prof. Hai Liu, National Engineering Research Center for E-Learning

Responsibilities: Determined the research topic and the focus of the patent based on the current situation of students' learning attention and the existing research results; Applied multimodal data using Pycharm, Python and Pytorch, the Transformer and multimodal information fusion index system to solve key difficulties in recognition of head posture, environmental sound and skin information, and finish the design process.

Achievement: The invention was patented by the China National Intellectual Property Administration.

Research on Intellisense and Quantitative Computation of Teachers' Non-verbal Behavior in Class Based on Multi-sensor Information
07/2022-09/2022

Supervisor: Prof. Hai Liu, National Engineering Research Center for E-Learning

Responsibilities: Understood the research status and development trends domestically and abroad; Constructed the understanding model of teachers' nonverbal behavior in class and designed quantitative indicators; Proposed a deep neural network model based on Transformer which was suitable for teacher's head pose recognition while teaching; Presented a multi-modal fusion model which played a complementary and cross-validation role to obtain comprehensive, stable and accurate evaluation result.

Achievement: The proposal was submitted for review by the National Natural Science Foundation of China.

ACTIVITIES & AWARDS

- Conferee and report presenter at the 2022 IEEE International Conference on Robotics and Biomimetics in Yunnan, China 12/2022
- Programmer and modeler in the 15th CCNU Challenge Cup Extracurricular Academic and Technological Works Competition (Third Prize) 12/2022
- Programmer and modeler in the National Mathematical Modeling Competition (National Second Prize & CCNU First Prize) 09/2022
- Programmer and modeler in the 7th CCNU Mathematical Modeling Challenge (First Prize) 06/2022
- Programmer and modeler in the Huazhong Cup College Students Mathematical Modeling Challenge (Second Prize) 05/2022
- Presented the work *YOLO-based Automatic Face Mask Detection* in the China University Big Data Challenge (Second Prize) 11/2021
- Programmer and modeler in the National Mathematical Modeling Competition (Provincial Second Prize & CCNU Third Prize) 09/2021

SKILLS

Software: PyCharm, VScode, GitHub, Anaconda, Matlab.

Computer Vision Algorithms: Convolutional Neural Networks, Vision Transformer, YOLOv1~v5, R-CNN, Swin-Transformer, ResNet, Diffusion Model, Recurrent Neural Network, Neural Collaborative Filtering, Graph Neural Network.

Programming Languages: Python, Pytorch, Latex, Matlab.