

Jiayi He

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EDUCATION

South China University of Technology

09/2021 - Expected 07/2025

Bachelor of Engineering, Intelligent Manufacturing Engineering

Guangzhou, China

GPA: 3.92/4.00, Average Score: 91.63/100

Main Courses: Artificial Intelligence and Applications, Data Structure and Algorithms, Applications and Analysis of Big Data in Manufacturing, Computer Networks, Design and Manufacturing, Classical Control Theory, etc.

SELECTED PUBLICATIONS

[1] **Jiayi He**, Jiao Chen, Suyan Dai, Qianmiao Liu, Weihua Li, Jianhua Tang, Dongpo Liu, *Continual Learning with Diffusion-based Generative Replay for Industrial Streaming Data*, 2024 IEEE/CIC International Conference on Communications in China

[2] Jiao Chen*, **Jiayi He***, Zuohong Lv, Weihua Li, Jianhua Tang, *Towards General Industrial Intelligence: A Survey and Outlook of Continual Large Models*, under review

[3] Jiao Chen, **Jiayi He**, Jianhua Tang, Weihua Li, *Knowledge Efficient Federated Continual Learning for Industrial Edge Systems*, under review

(* These authors contributed equally to the work)

RESEARCH EXPERIENCES

Self-correction of Large Language Models

04/2024 - Present

University of Illinois Urbana-Champaign, Advisor: Yi R. Fung, Heng Ji

Online

- Explore the role of automated feedback in enhancing the self-correction process of Large Language Models (LLMs) and analyzed the performance and challenges of LLMs in correcting errors during the inference stage and the subsequent impact on fine-tuning.
- Develop a novel approach for mistake-driven fine-tuning to enable LLMs to improve their performance by learning from diverse mistake types, aiming to provide insights into optimizing feedback prompts and refining LLM training methodologies for better mistake rectification.

Continual Learning in Industrial Edge Systems

05/2022 - Present

South China University of Technology, Advisor: Jianhua Tang

Guangzhou, China

- Proposed a novel model called distillation-guided diffusion-based continual learning to address the problem of low quality data generation in generative replay in IIoT environments [1].
- Conducted a survey of recent advancements and future prospects in continual large models for general industrial intelligence on two main perspectives: large models for general industrial intelligence, and large models on general industrial intelligence [2].
- Proposed a novel federated continual learning method for industrial edge systems by smoothly handling transitions between non-stationary tasks through a knowledge efficient strategy [3].

ACADEMIC ACTIVITIES

University of California, Berkeley

08/2023 - 12/2023

Visiting Student, Multidisciplinary Program

Berkeley, US

SELECTED AWARDS

South China University of Technology Academic Scholarship (Top 4%, ¥20,000)

11/2022

South China University of Technology

Zhuoyue Group Donated Scholarship (Top 4%, ¥20,000)

11/2022

Zhuoyue Public Welfare Foundation

Merit Student

11/2022

South China University of Technology

South China University of Technology Academic Scholarship (Top 4%, ¥20,000)

11/2023

South China University of Technology

TEACHING ASSISTANT

Introduction to Dynamics and Vibration

2024 Spring

South China University of Technology, Undergraduate Course

- Provide assistance with class procedure (*e.g.*, creating examination questions for midterm and final exam) and answer questions about homework and projects.
- Provide corrections and feedback for homework, projects and exams.

SKILLS

Language: Mandarin (Native), Cantonese, and English (TOEFL: 102 - Speaking: 24, Writing: 26)

Programming: Python, C, and MATLAB

Tool: PyTorch, Git, Numpy, and LaTeX