



和瑞 Rui He

PHD CANDIDATE IN MACHINE LEARNING · UoB & SUSTech

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Personal Profile

A highly motivated **PhD candidate** jointly enrolled at the University of Birmingham (UoB) and Southern University of Science and Technology (SUSTech). Solid academic foundation in **Computer Science** and **Physics** with research endeavors primarily concentrated on **machine learning**, specifically in **active learning** and **multi-domain learning**. Strong ability to **quick and independent learn**, with a proven track record of delivering high-quality research outcomes. In-depth experience from multiple teaching assistantships in AI-related fields demonstrates solid **presentation skills** and **knowledge-organization skills**. Motivated by the rapid advancements in AI and its practical applications, and powered by **a passion for problem-solving**, the aim is to secure a challenging role that fully utilizes AI's capacity to confront and resolve significant real-world problems.

Education

University of Birmingham (UoB)

Birmingham, UK & Shenzhen, China

PH.D. IN COMPUTER SCIENCE AND ENGINEERING (SUSTech JOINT PROGRAM)

Sep. 2018 - Dec. 2023 (Expected)

- Supervisor: Ke Tang (SUSTech), Shan He (UoB)
- Research Fields: Active Learning, Multi-Domain Learning, Domain Adaptation, etc.
- Thesis title: Multi-Domain Active Learning
- Crucial growth: Problem-Driven Thinking, Critical Thinking, Presentation Skill

Temple University

Philadelphia, USA

SEMESTER EXCHANGE PROGRAM GPA:3.93/4

Aug. 2016 - Dec. 2016

- Courses: Problem Solving and Programming with Python, Computing for Scientists, Atomic Nuclear & Partical Physics, etc.
- Crucial growth: Overcoming the fear of the unfamiliar

Southern University of Science and Technology (SUSTech)

Shenzhen, China

B.Sc. IN PHYSICS GPA:3.65/4

Sep. 2014 - July 2018

- Supervisor: Hu Xu, Haizhou Lu
- Courses: Quantum Mechanics, Statistical Physics, Probability and Statistics, Data Structure and Analysis, etc.
- Outstanding Graduate in Shuren College
- Crucial growth: Strong ability to learn independently and quickly

Skill

Soft Skills

Problem-Oriented Thinking, Result-Oriented Mindset, Quick Learner with Knowledge Reorganization, Teaching Skills

Programming

Python (PyTorch, Numpy, Matplotlib, Scikit-learn, etc.), Java, _tex

Large AI Models

ChatGPT, OpenAI API

Development

Hexo (static website generator), Git, Nginx + Tencent Cloud (web page deployment)

Languages

Chinese (native language), English (business communication)

Publication

- 2022 **Multi-Domain Active Learning: Literature Review and Comparative Study**, IEEE Transactions on Emerging Topics in Computational Intelligence (TETCI)
- 2023 **Multi-Domain Learning From Insufficient Annotations**, (Submitted to ECAI 2023)
- 2023 **Perturbation-Based Two-Stage Multi-Domain Active Learning**, (Submitted to CIKM 2023)
- 2023 **Large Language Models can be Guided to Evade AI-Generated Text Detection**, (Submitted to NeurIPS 2023)

Work Experience

Southern University of Science and Technology

Shenzhen, China

POSTGRADUATE TEACHING ASSISTANT - INTELLIGENT DATA ANALYSIS CSE5002 (SPRING SEMESTER EACH YEAR)

Jan. 2020 - PRESENT

- **Deliver laboratory courses** for graduate-level students.
- Responsible for designing laboratory materials (slides & codes), assignments and projects.
- Key personal growth: In-depth teaching skills, the ability to connect knowledge.

Southern University of Science and Technology

Shenzhen, China

POSTGRADUATE TEACHING ASSISTANT - ARTIFICIAL INTELLIGENCE CS303 (FALL SEMESTER EACH YEAR)

Sep. 2019 - Jan. 2022

- **Conducting remote laboratory classes** for an international undergraduate students.
- Responsible for preparing teaching materials for laboratory.
- Key personal growth: Remote communication skills and technical support skills.

University of Birmingham

Birmingham, UK

POSTGRADUATE TEACHING ASSISTANT - DATA STRUCTURES AND ALGORITHMS

Feb. 2019 - June 2019

- Responsible for project guidance and coding assignment correction for undergraduate students.
- Key personal growth: Communication skills.

University of Birmingham

Birmingham, UK

POSTGRADUATE TEACHING ASSISTANT - SOFTWARE WORKSHOP (JAVA)

Oct. 2018 - Dec 2018

- **Deliver tutorial sessions** and grade coding assignments for graduate students.
- Key personal growth: Demonstration skills in English, public presentation.

Project

Awesome Active Learning

Github Open-Source Repository

FOUNDER & WRITER

Feb. 2020 - PRESENT

- A well-structured active learning all-in-one knowledge library.
- Including taxonomy, papers, codes, and other resources.

Multi-Domain Active Learning: a Pipeline

Github Open-Source Repository

FOUNDER & DEVELOPER

Jan. 2022 - Dec. 2022

- A general pipeline for multi-domain active learning (MDAL).

Others

Certificate for CPR & AED

CHINESE RED CROSS SOCIETY - 中国红十字会

- Proficient in performing cardiopulmonary resuscitation (CPR) and using an automated external defibrillator (AED).