

Ming He

✉ mhe27@sheffield.ac.uk 📞 +44 07709 586014 Website Page: <https://hm1st.github.io/>

EDUCATION

UNIVERSITY OF SHEFFIELD, UK

Sep 2023 - Now

Ph.D. in Computer Science

- Research Area: Text-guided 3D object Generation & Manipulation

UNIVERSITY OF SOUTHAMPTON, UK

Sep 2021 - Sep 2022

Master of Science in Artificial Intelligence

- Distinction Degree
- Dissertation in Image-to-Image translation from generated image to real scene.

ZHEJIANG UNIVERSITY OF FINANCIAL AND ECONOMIC, MAINLAND CHINA

Sep 2017 - Jul 2021

Bachelor of Science in Data Science and Big Data Technology

- Dissertation in Time Series Data Analysis on E-commerce Data.

RESEARCH PROJECTS

Prediction Model of Ground Reactive Force Based on Deep Learning

Apr 2020 - Jan 2021

Research Assistant, under the guidance of Dr Dongwei Liu

- Carried a research on judging whether people's walking posture is normal or ill. This is based on the movement data of people's joints when walking, such as the crook degree of knee flexion and the movement distance of all directions. Keras Library were applied.
- Standardized the collected data and built the LSTM neural network model with the training set and the test set; imported the time series data into the model for prediction.
- Published Paper: **Deep learning based ground reaction force estimation for stair walking using kinematic data**

Fire and Smoke Detection Based on Deep Learning

Sep 2019 - 12 2019

Research Assistant, under the guidance of Dr Dongwei Liu

- Detect fire and smoke from the video data provided by the company of Sinopec. To prevent the fire accident in the oil field, the object detection model was built to detect any form of smoke instantly.
- Use 6 layers' EfficientNet model to extract and analysis the feature from single frame. Model was trained on wildlife fire dataset.
- Tested on uniformly sampled video frames and have a result in over 90% precision.

ACADEMIC PROJECTS

Solving Dynamic Maze

2022, Southampton

- Study and implement reinforcement learning techniques. Use RL algorithm to solve a randomly generated maze (201*201) with random fire generated in the empty space at each time step.
- Require building the whole system from scratch. Find the shortest path from beginning (upper left) to the destination (lower right) is the goal.
- Reached all the objectives. Tried a series of algorithms (Q-Learning, Deep Q Learning, SARSA and Actor-Critic) afterwards and different strategies based on the built system. Experiments demonstrate that on-policy model leads to a better performance for avoiding random fire .

MSc Thesis: Image-to-Image translation from computer generated graphic to real scene

2022, Southampton

Supervised by Dr. Klaus-Peter Zauner

- Conduct style-transfer on computer generated forest image to photographic image. Use cycleGAN (unpaired contrastive learning) and cGAN (pix2pix) to achieve the best results. A series of experiments were done to find the best combination of feature extractor, model structure and loss functions.
- In the end, we get satisfying result from cycleGAN approach. cGAN has its own strong point and will exceed cycleGAN model if the gathered dataset is cleaner and more comprehensive.

Competitions & Additional

- Honorable Mention, MCM/ICM 04/2020
- Provincial Third Prize, China Undergraduate Mathematical Contest in Modeling 09/2019
- Sliver Medal, Kaggle Competition American Express 08/2022
- Technical Skills: Python(Pytorch, Tensorflow), C, C++ Java, Matlab, R, SPSS
- Language Skills: Mandarin (Native), English (Business Professional)