Yu ZHANG

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EDUCATION

Master of Science in Artificial Intelligence 09/2021–09/2022

University of Southampton Hampshire, England

• Selected courses:

Intelligent Agents, Foundations of Artificial Intelligence, Foundations of Machine Learning, Advanced Machine Learning, Computer Vision, Reinforcement and Online Learning, Deep Learning

Bachelor of Engineering in Computer Science and Electronic Engineering 09/2016-07/2020

University of Liverpool (09/2018-07/2020) Liverpool, England

Xi'an Jiaotong-liverpool University (09/2016-07/2018) Xi'an, China

• Selected courses:

Database Development, Multi-agent Systems, Game Theory, Neural Networks, Linear Algebra, Calculus, etc.

PUBLICATION

• Zhiyuan Yang, Haoyu Xie, Yue Xu, Qiaochu Xu, **Yu Zhang,** Sinuo Zhao, Hao Yuan, Yajun Fang. Evaluation of Smart Response Systems for City Emergencies and Novel UV-Oriented Solution for Integration, Resilience, Inclusiveness and Sustainability**.** *2020 5th International Conference on Universal Village (UV), IEEE.* DOI: 10.1109/UV50937.2020.9426215

• **Yu Zhang**. Application and Development of Computer Artificial Intelligence Technology. *Journal of Computer Science Research, 2019*. DOI:10.30564/jcsr.v1i2.1144

• Yi Tao, Le Zhuo, Liangbing Zhao, **Yu Zhang**, Taisheng Huang. Bilingual Multi-Emotion Styles Text-to-Image Generation Model. (Accepted by 2022 *6th International Conference on Universal Village (IEEE UV2022))*

• Yi Tao, Taisheng Huang, **Yu Zhang**, Le Zhuo, Liangbing Zhao. Chinese Labeled Real Scenario Text-to-Image Dataset. (Accepted by 2022 *6th International Conference on Universal Village (IEEE UV2022))*

RESEARCH EXPERIENCE

Machine Learning-based Text Generation Generating Comments for Social Media 11/2022-present

• **Supervisor:** Prof. Feng Li, Institute of Artificial Intelligence, Harbin Institute of Technology, China

1. Crawled and analyzed more than 60 subjects from social media with a minimum of 500 blogs in each subject and 3000 comments in each blogs to reinforce the subject relevance and characteristics of generated comments.
2. Designed a corpus of topics and sentiments using Latent Dirichlet Allocation(LDA) as a topic generator, support vector regression(SVR) as sentence clusterer and pre-trained BERT-baseline extracting sentiment.
3. Developed an emotive and topic type comment generator using Probabilistic Latent Semantic analysis(PLSA) as topic comments generator, and implemented ConPRG as paraphrase generator.

Control of Repetitive Tasks using Reinforcement Learning 06/2022-09/2022

• **Supervisor:** Dr.Bing Chu, University of Southampton

1. Designed a novel control system in printer and second-order dynamic system combining the Iterative Learning Control(ILC), Norm-Optimal ILC with Actor Critic without neural network.
2. Analyzed the influence of numerous parameters based on diversity control systems.

Reproducing BERTScore Evaluating Text Generation With BERT

• **Supervisor:** Dr.Kate Farrahi & Dr.Jonathon Hare, University of Southampton 04/03/2022-13/05/2022

1. Verified BERTscore in machine translation task based on WMT18 dataset in 5 different language.

2. Implemented 6 BERT, 3 RoBERTa, 2 XLNet, and 2 XLM pretrained models to perform corpus-based machine translation, converting the texts of all languages into English.
3. Analyzed differences with the original paper and possible reasons.

Application of Deep Reinforcement Learning in Playing StarCraft2 09/2019-05/2020

• **Supervisor:** Dr.Shan Luo, University of Liverpool

1. Designed an agent implementing detailed operations with 6 Protoss buildings and 7 Protoss weapons running the StarCarftII environment.
2. Developed a DPPO network combining the Multi-threaded synchronous training of Asynchronous Advantage Actor Critic(A3C) and Proximal Policy Optimization(PPO).
3. Enhanced the success rate of PPO agent against simple computers (to 73% winning percentage), medium computers (to 51% winning percentage), and advanced computers (to 39% winning percentage).

SKILLS

▪ **Languages**: Chinese (mother tongue) • English (fluent)
▪ **Technical skills**: Python, PyTorch, TensorFlow, NLTK, RASA, Scikit-learn, Matlab, JAVA , C++