JIAMING CHEN

School of Control Science and Engineering, Shandong University, Jinan, P.R. China

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Education

M. Sc. in Control Science and Engineering	Sep. 2021 – Present
School of Control Science and Engineering, Shandong University	*Jinan, China*

Advisor*: Prof. Wei Zhang*

GPA*: 85.41 / 100*

Core Courses*: Optimization Method (98), Big Data Analytics (94), Deep Learning and Image Processing (97)*

B. Eng. in Automation	Sep. 2017 – Jul. 2021
School of Control Science and Engineering, Shandong University	*Jinan, China*

GPA*: 88.46 / 100*

Core Courses*: Advanced Mathematics (93), Functions of Complex Variable and Laplace Transform (97), Machine Learning (95), Fundamentals and Interface Technology of Microcontroller (97), Introduction to Artificial Intelligence (95), Image Processing and Computer Vision (97)*

Publications

[1] **Jiaming Chen***, Weixin Luo*, Ran Song, Xiaolin Wei, Lin Ma, Wei Zhang, "Learning Point-Language Hierarchical Alignment for 3D Visual Grounding," *IEEE Transactions on Pattern Analysis and Machine Intelligence* (T-PAMI) under review. [arXiv][code]

[2] **Jiaming Chen*,** Weixin Luo*, Wei Zhang, Lin Ma, "Explore inter-contrast between videos via composition for weakly supervised temporal sentence grounding," *Proceedings of the AAAI Conference on Artificial Intelligence* (AAAI), Vancouver, BC, 2022. [paper]

[3] Hao Zhang*, **Jiaming Chen***, Jiyu Cheng, Yibin Li, Simon X. Yang, Wei Zhang, "Nowhere to Go: Benchmarking Multi-robot Collaboration in Target Trapping Environment," *IEEE Transactions on Industrial Electronics* (T-IE) under review. [arXiv][code]

[4] Dewei Wang, **Jiaming Chen** and Jiyu Cheng, "A Survey of Object Goal Navigation: Datasets, Metrics and Methods," *IEEE International Conference on Mechatronics and Automation* (ICMA), Harbin, China, 2023. [paper]

  * These authors contributed equally to the work.

Research Experiences

Research Interest: Computer Vision, Language and Vision, Robot Learning, Multi-Agent Reinforcement Learning

Project: Weakly Supervised Temporal Grounding Based on Inter-Contrast between Videos

- Proposed a composition strategy explores the inter-contrast between videos by selecting clips from different videos and fusing them, which provides pseudo temporal annotations.
- Designed a transformer-based framework and a multi-tasks training paradigm including proposal classification, boundary refinement, clip ratio prediction, and masked word prediction in the fully supervised manner using the pseudo temporal annotations.
- Published and presented at the *36th AAAI Conference on Artificial Intelligence* (AAAI), 2022.

Project: Learning Point-Language Hierarchical Alignment for 3D Visual Grounding

- Designed a hierarchical alignment model for 3D visual grounding, which learns gradually align word-level and sentence-level linguistic embeddings with visual representations upon multi-granularity spatial fields in an end-to-end manner.
- Achieved a new state-of-the-art on two public benchmarks (ScanRefer and ReferIt3D) and won champion of the ECCV 2022 ScanRefer Challenge.
- Submitted to *IEEE Transactions on Pattern Analysis and Machine Intelligence* (T-PAMI).

Project: Benchmarking Multi-Robot Collaboration in Target Trapping Environment

- Proposed a novel benchmark to evaluate multi-robot collaboration in multi-robot target trapping task and propose corresponding task evaluation indicators.
- Built a 2D simulation environment named Target Trapping Environment (T2E) based on real-world obstacle model. Conducted experiments on a series of multi-agent reinforcement learning (MARL) algorithms on T2E and provided comprehensive analyses.
- Submitted to *IEEE Transactions on Industrial Electronics* (T-IE).

Internship Experience

Internship at Vision Intelligence Center, Meituan   **Apr. 2021 – Jan. 2023**

Position: Algorithm Strategy Research Internship   *Beijing, China*

Mentor: Dr. Weixin Luo, Dr. Lin Ma

- Researched algorithms for video action detection and temporal sentence grounding;
- Deployed and validated algorithms on public datasets and company data for practicality;
- Authored a research paper presented at AAAI2022;
- Prepared and submitted patent applications for the developed algorithms.

Review Services

PC Member: AAAI 2023, AAAI 2024
Reviewer: ICRA 2023, CAC 2023, Pattern Recognition Letters

Contests

Champion of the ECCV 2022 ScanRefer Challenge	**Oct. 2022**
Second Prize, National Post-Graduate Mathematical Contest in Modeling, China	**Dec. 2021**
Champion of the 1st International Challenge on Intelligent Perception of Ocean Targets	**Dec. 2020**
4th place of 2nd ABC International Conference Cooking Activity Recognition Challenge	**Jun. 2020**

Honors

Huawei Scholarship	**Oct. 2022**
Special Freshman Scholarship, Shandong University	**Sep. 2021**
The Excellent Graduate in Shandong University	**Jun. 2021**
Academic Scholarship, Shandong University (2 times)	**Sep. 2017 – Sep. 2019**

Skills

English: TOEFL Overall 90 (R: 24 L: 25 S: 20 W: 21)   **Languages**: Python, C/C++
Technologies/Frameworks: Linux, Git, Docker, PyTorch, Tensorflow, OpenCV, Open3D.