SIPENG ZHENG

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RESEARCH INTEREST

Visual Relation Detection, Action Recognition, Multimodal Learning

EDUCATION

Renmin University of China   *Sep. 2018 - Present*
Ph.D in Computer Science   Advisor: Qin Jin

Renmin University of China   *Sep. 2014 - Jun. 2018*
B.S in Computer Science   Advisor: Qin Jin

RESEARCH PROJECTS

Few-shot Action Recognition   *Dec. 2020 - Present*
- It is important to build salient representation for each few-shot action class. Therefore, I am exploring spatial/temporal/channel-wise multimodal fusion methods to integrate multi-modalities (image, motion, depth, keypoints etc.) for salient action class prototype learning.

Video Relation Detection   *Apr. 2019 - Apr. 2020*
- Built a strong relation system with a temporal-aware relational predictor for video relation detection; ranked 2nd in ACM MM 2019 Video Relation Understanding Grand Challenge.
- Improved the tracking module of the previous pipeline, which was more efficient in multi-person scenarios and achieved better tracking performance; ranked 4th in ACM MM 2020 Challenge.

Visual Relation Detection   *June. 2018 - Nov. 2020*
- Proposed a multi-level attention method to fuse multiple modalities (i.e. visual appearances, spatial locations, textual semantics) for relation prediction; published in ACM MM 2019.
- Proposed a graph-based method to effectively utilize human skeletons for fine-grained human-object relation prediction; published in ICME 2020.
- My recent work is proposed to build sparse object graphs and a multi-step training strategy to efficiently and effectively reason over contexts for visual relation detection.

AWARDS AND HONORS

- ★ Ranked 4th in ACM MM 2020 Video Relationship Understanding Grand Challenge.   2020
- ★ Ranked 2nd and won the Best Method Prize in ACM MM 2019 Video Relationship Understanding Grand Challenge.   2019
- ★ First Class Scholarship for Ph.D Students.   2020
- ★ First Class Scholarship for Ph.D Students.   2019
- ★ First Class Scholarship for Undergraduate Students.   2018
- ★ First Prize in National University Mathematical Modeling Competition of Beijing Area. 2015

PUBLICATION

1. **Sipeng Zheng**, Shizhe Chen, and Qin Jin. Skeleton-based interactive graph network for human object interaction detection. In *ICME*, pages 1–6, 2020

2. **Sipeng Zheng**, Shizhe Chen, and Qin Jin. Visual relation detection with multi-level attention. In *ACM Multimedia*, pages 121–129, 2019

3. **Sipeng Zheng**, Xiangyu Chen, Shizhe Chen, and Qin Jin. Relation understanding in videos. In *ACM Multimedia*, page 2662–2666, 2019

TEACHING EXPERIENCE

Teaching Assistant	Introduction to the Theory of Computation	2020
Teaching Assistant	Probability and Statistics	2019
Teaching Assistant	Spoken Language Processing	2018

PARTICIPATED GRANTS

- National Key Research and Development Plan   No. 2016YFB1001202
Computational Principles of Human-Computer Interaction

- Beijing Natural Science Foundation   No. 4192028
Language Understanding and Interaction Based on Auditory Information

TECHNICAL SKILLS

Programming	Python, C/C++, Javascript, HTML, MATLAB, Bash
Framework	Pytorch, Tensorflow