Yanyuan Qiao

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BIO

Yanyuan Qiao is a Postdoctoral Research Fellow working with A.P. Qi Wu, at the Australian Institute for Machine Learning (AIML), The University of Adelaide. She has been working on multi-modal learning tasks, such as Vision-and-Language Navigation, Text-to-Image Synthesis, and Visual Question Answering, and has published papers in top journals and conferences.

Research Interest

Vision-and-Language, Embodied AI.

Education

The University of Adelaide, Adelaide, Australia **2020 – 2023**

PhD in Computer Science

University of Chinese Academy of Sciences, Beijing, China **2016 – 2019**

MEng in Electronics and Communication Engineering

Southeast University, Nanjing, China **2012 – 2016**

BEng in Sensor Network Technology

Publications

Journals:

- **Yanyuan Qiao**, Yuankai Qi, Yicong Hong, Zheng Yu, Peng Wang, Qi Wu, HOP+: History-enhanced and Order-aware Pre-training for Vision-and-Language Navigation, IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI), 2023. (Core rank: A^*)
- **Yanyuan Qiao**, Chaorui Deng, Qi Wu, Referring Expression Comprehension: A Survey of Methods and Datasets, IEEE Transactions on Multimedia (TMM), 2020. (Core rank: A^*)
- Zhiwei Fang, Jing Liu, Yong Li, **Yanyuan Qiao**, Hanqing Lu, Improving Visual Question Answering Using Dropout and Enhanced Question Encoder, Pattern Recognition (PR), 2019. (Core rank: A^*)

Conferences:

- **Yanyuan Qiao**, Yuankai Qi, Zheng Yu, Jing Liu, Qi Wu, March in Chat: Interactive Prompting for Remote Embodied Referring Expression, ICCV, 2023. (Core rank: A^*)
- **Yanyuan Qiao**, Zheng Yu, Qi Wu, VLN-PETL: Parameter-Efficient Transfer Learning for Vision-and-Language Navigation, ICCV, 2023. (Core rank: A^*)
- **Yanyuan Qiao**, Yuankai Qi, Yicong Hong, Zheng Yu, Peng Wang, Qi Wu, HOP: History-and-Order Aware Pre-training for Vision-and-Language Navigation, CVPR, 2022. (Core rank: A^*)
- **Yanyuan Qiao**, Qi Chen, Chaorui Deng, Ning Ding, Yuankai Qi, Mingkui Tan, Xincheng Ren, Qi Wu, R-GAN: Exploring Human-like Way for Reasonable Text-to-Image Synthesis via Generative Adversarial Networks, ACM MM, 2021. (Core rank: A^*)
- **Yanyuan Qiao**, Zheng Yu, Jing Liu, RANKVQA: Answer Re-ranking for Visual Question Answering, ICME, 2020. (Core rank: A) (**Oral**)
- **Yanyuan Qiao**, Zheng Yu, Jing Liu, VC-VQA: Visual calibration mechanism for Visual Question Answering, ICIP, 2020. (Core rank: B)
- Zhiwei Fang, Jing Liu, **Yanyuan Qiao**, Qu Tang, Yong Li, Hanqing Lu, Enhancing Visual Question Answering Using Dropout, ACM MM, 2018. (Core rank: A^*)

Research Experience

Vision-and-Language Navigation **May 2021 - present**

- Proposing a novel paradigm that applies LLMs to generate step-by-step instructions to guide the agent navigate for remote embodied referring expression task.
- Exploring parameter-efficient transfer learning methods for VLN and proposing VLN-PETL specifically designed for VLN tasks.
- Proposing a history-enhanced and order-aware pre-training and the complementing fine-tuning paradigm with an external memory network for VLN tasks.

Text-to-Image Synthesis **Sept 2020 - Apr 2021**

- Proposing a novel Generative Adversarial Network to produce photo-realistic and reasonable images from the corresponding intricate descriptions by imitating the drawing process of humans.

Visual Question Answering **Sept 2017 - Feb 2020**

- Developing a visual calibration mechanism for VQA systems with a visual feature reconstruction module that can guide predicted answers to be more relevant to the image content.
- Proposing a new VQA paradigm to achieve a better understanding of visual information and overcome the language-bias problem.
- Proposing a siamese dropout mechanism to enhance the robustness of the VQA model.

Honors and Awards

Honors & Scholarship:

- Ecoles d'été France Excellence Scholarship (¥15,000) 2018
- University of Chinese Academy of Sciences 2016-2017 Outstanding Student 2017
- University of Chinese Academy of Sciences Academic Scholarship 2016
- Southeast University 2014-2015 Course Scholarship 2015
- Southeast University Individual Scholarship for Excellence in Social Practice 2013
- Southeast University Individual Scholarship for Excellence in Volunteer Service 2013

Awards & Prizes:

- 4th place in the VQA Challenge at CVPR Workshop 2018 2018

Technical and Personal Skills

- Programming Languages: Python, C++, Matlab, LaTeX.
- Libraries: PyTorch, Numpy, Caffe.
- Platforms: Linux, Windows.
- Languages: English (Fluent), Mandarin (Native).

Professional Activities

- Conference Reviews: ACM MM 2020/2021, BMVC 2021/2023, CVPR 2021/2022, NeuIPS 2023.
- Journal Reviews: IJCV, TIP, TMM, TOMM