JIA, Mengzhao

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Education

M.Phil. in Computer Science and Technology *(expected)*   *09/2020—06/2023*
Shandong University, China. Supervised by Prof. Liqiang Nie   *GPA: 86.62/100*
B.Eng. in Electronic Science and Technology   *09/2016—06/2020*
Shandong University, China   *GPA: 87.02/100 Rank: 4/12*

Publications & Manuscripts

Multimodal Activation: Awakening Dialog Robots without Wake Words

*Liqiang Nie, **Mengzhao Jia**, Xuemeng Song, Ganglu Wu, Harry Cheng and Jian Gu. (SIGIR 2021)*

- We defined a new task that leverages audio, visual, and textual signals to awaken dialog robots without wake words (*e.g.*, Hey, Siri.).
- We divided the multimodal activation task into two key sub-problems, *i.e.*, audio-visual consistency detection and semantic talking intention inference.
- We leveraged fine-grained face landmarks information to estimate audio-visual consistency, and we adopt matrix factorization to detect the semantic topic in textual transcripts.

Query-oriented Micro-video Summarization

***Mengzhao Jia**, Yinwei Wei, Liqiang Nie*

Manuscript, target at IEEE Transactions on Pattern Analysis and Machine Intelligence

- The motivation is to improve the performance of the summarization model on micro-video domain data. Adapt a Bart-based model to the micro-video search scenario's unique features (semantic gaps in modalities, sophisticated scenes, and diverse queries from users).
- We adopted modality confidence assignment to empower training under semantic gaps between modalities. And we utilized an entity classification module to distinguish key entities. Multiple queries were selected for training by an informative sampling strategy.

Improving Emotional Support Response with Strategy-specific Memory

Ongoing, target at ACL 2023

- The emotional support dialog system aims to reduce help-seeker's depression and provide suggestions for their real-life challenges. Communicating strategies are required to generate supportive responses.
- We adopted the memory bank to store the shared features of responses under the same strategy, which could guide the system to form a more humanized strategy utilization. We also mined common sense knowledge to generate reasonable and feasible suggestions.

Internship Experience

R&D Intern   *06/2022 - now*

Alibaba DAMO Academy (Hangzhou)

- Research on enhancing empathy in the open-domain dialog system.
- Proposed to enhance empathy and informativeness in the emotional support conversation system through leveraging strategy memory and commonsense knowledge.

R&D Intern   *04/2021 - 01/2022*

Kuaishou Technology (Beijing)

- Completed the task of query-oriented micro-video abstractive summarization. We designed a model to adapt training with the micro-video domain data to improve performances in real-life search scenarios.
- Investigated existing large-scale multimodal pre-training tasks. Collected millions of data from micro-video search logs for pre-training.

Algorithm Intern   *01/2020 - 09/2020*

Momenta (Suzhou) Limited

- Adopted style transfer algorithm to remove the camera ISP module and adapt RAW format data directly to object detection task. Successfully implemented the algorithm using RAW format data to assist training to improve accuracy.

- Completed the pre and mid-term work of the pedestrian keypoints detection project, *i.e.*, data collection and selection, labeling tools and method adaptation, and implementation of existing algorithms.

Algorithm Intern   *04/2019-06/2019*
Qingdao Hisense Medical Equipment Co., Ltd.
- Participated in implementing and modifying the Dense V-Net for automatic bronchial segmentation in computed tomography data.
- Wrote data preparing and processing programs for computed tomography data, including automated downloading, data format conversion, and training label preparation.

Activities Involvement

Summer camp Member, *Sinovation Ventures "Deecamp"*   *07/2019-08/2019*
- *Completed the project "Automatic detection of skull fracture". Designed a two-stage scheme with a post-classification network to reduce false-positive rate.*
- *Designed product modality and demonstration methods for End-of-Camp debriefing. Tracked and monitored the progress of the project.*

Honors and Awards

First Class Graduate Scholarship, Shandong University	*12/2021*
Excellent Graduate, Shandong University	*05/2020*
Second Prize, 2019 Asia Student Supercomputer Challenge (ASC2019)	*04/2019*
Third Prize, The 6th National University Students' Opt-Sci-Tech Competition	*07/2018*
Second Class Undergraduate Scholarship, Shandong University	*12/2017*

Personal Skills

Programming	*Python, PyTorch*
Language	*English: IELTS 7*