

JIAN WANG

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EDUCATION

South China University of Technology (SCUT)

Sep. 2017 - Jun. 2020

M.Eng. Computer Science & Technology

GPA: 87.83/100

Natural Language Processing (NLP), Machine Learning

South China University of Technology

Sep. 2013 - Jun. 2017

B.Eng. Network Engineering (Major)

GPA: 3.74/4.0

B.Ec. Finance (Minor)

EXPERIENCE

SIAT, Chinese Academy of Sciences

Shenzhen, China

Research intern (NLP group)

Aug. 2018 - Sep. 2019

Supervisor: Prof. Min Yang

PUBLICATIONS

Jian Wang, Junhao Liu, Wei Bi, Xiaojiang Liu, Kejing He, Ruifeng Xu and Min Yang. Improving Knowledge-aware Dialogue Generation via Knowledge Base Question Answering. In *Proceedings of the 34th AAAI Conference on Artificial Intelligence (AAAI-2020)*.

Jian Wang, Kejing He and Min Yang. Topic Discovery by Spectral Decomposition and Clustering with Coordinated Global and Local Contexts. *International Journal of Machine Learning and Cybernetics* (JCR Q1).

Jian Wang, Junhao Liu, Kejing He, Wei Bi, Xiaojiang Liu, Ruifeng Xu and Min Yang. Dual Dynamic Memory Network for End-to-End Multi-turn Task-oriented Dialog Systems. (COLING-2020 under review)

RESEARCH PROJECTS

End-to-end Task-oriented Dialog Systems

Apr. 2019 - Oct. 2019

Research project at SIAT, Chinese Academy of Sciences

- Proposed a Dual Dynamic Memory Network (DDMN) for knowledge reasoning in multi-turn task-oriented dialog systems, which dynamically keeps track of long-term dialog states and KB knowledge with a novel updating mechanism.
- Employed separate memories to model dialog context and KB tuples. The iterative interactions between the two kinds of memories make the decoder focus on more appropriate dialog context and KB facts for generating coherent and human-like dialogs.
- Experimental results on In-Car Assistant and CamRest datasets show that the proposed model achieves impressive results compared to the existing methods across multiple evaluation metrics. We also perform a detailed analysis to study DDMN, showing that the model is able to maintain more sustained conversations, and performs much better than the compared methods with the increase of dialog turns.

Dialogue Generation with Knowledge Transferring

Aug. 2018 - Apr. 2019

Research project at SIAT, Chinese Academy of Sciences

- Proposed a novel knowledge-aware dialogue generation model TransDG, which transfers the abilities of question understanding and fact extraction from the pre-trained knowledge base question answering (KBQA) model to facilitate both post understanding and factual knowledge selection from KB.

- Proposed a multi-step decoding strategy which captures the knowledge connection between the post and response. Both the post and draft response generated by the first-step decoder is matched with relevant facts from KB, which makes the final response generated by the second-step decoder more appropriate and reasonable with respect to the post.
- Proposed a response guiding attention mechanism which steers the model to focus on relevant features with the help of k -best response candidates.
- Extensive experiments on Reddit dialogue dataset demonstrated that TransDG outperforms baseline models in perplexity, BLEU, entity score and human evaluation.

Abstractive Text Summarization

Aug. 2018 - Dec. 2018

Competition project of 2018 Byte Cup International Machine Learning Competition

- Worked in a team to solve the task of automatically generating titles for given articles in Byte Cup 2018 International Machine Learning Competition, where we proposed to employ a CNN network to select salient sentences, then employ a sequence-to-sequence model with copy mechanism to rewrite the extracted sentences, finally build an advantage actor-critic (A2C) model with policy gradient to improve the performance.
- Achieved Rouge-L score of 35.38 on online validation and 38.98 on online test, awarded as the **3rd prize** in the finals among over 1000 teams.

Topic Modeling

Sep. 2017 - Jul. 2018

Research project at Big Data and High Performance Computing Lab, SCUT

- Proposed a novel Coordinated Embedding Topic Model (CETM) for topic modeling, which is a new paradigm different from conventional probabilistic models, since we incorporate spectral decomposition and clustering by leveraging both global and local context information to discover topics.
- Extensive experiments on two real-world datasets (20 Newsgroups & Reuters-21578) demonstrated the proposed model can discover more coherent topics and classify documents more accurately, meanwhile need much less hyper-parameters compared with other baseline topic models (e.g., Gaussian-LDA, LFTM, CLM).

HONORS/AWARDS

AAAI 2020 Student Scholarship	2020
First Class of Academic Scholarship of South China University of Technology	2018, 2017
National Scholarship (Top 1% , the highest national wide scholarship for undergraduates)	2016
National Encouragement Scholarship (Top 10%)	2015, 2014
Third Place of 2018 Byte Cup International Machine Learning Competition	2018
Ranked 50 th Worldwide at IEEEExtreme 11.0 Programming Competition	2017
Shenzhen Area Site Bronze Medal of HUAWEI Code Craft 2016	2016
Third Prize of the First Next-Generation Internet Technology Innovation Competition	2015
Merit Student of SCUT Award & Outstanding Student Leader Award	2015, 2014

TEACHING EXPERIENCE

Teaching assistant for <i>Algorithm Design and Analysis</i> , SCUT	Spring 2018
Teaching assistant for <i>Advanced Language Program Design (C++)</i> , SCUT	Fall 2017

TECHNICAL SKILLS

Programming Languages	C/C++, Python, Java, Shell, JavaScript
Tools	Tensorflow, PyTorch, Keras, MATLAB, Git
Editing	LaTeX, Markdown, Vim