

EDUCATION

Nankai University

M.Sc. in *Computer Science and Technology*

Tianjin, China

Sep. 2018 - Jun. 2021 (Expected)

- Supervisor: Prof. Zhenglu Yang
- Research Interest: Text Summarization, Natural Language Processing

Nankai University

B.Eng. in *Software Engineering*

Tianjin, China

Sep. 2014 - Jun. 2018

- Related Courses: Big Data, Data Structure, Operating System, Compiler System, Discrete Mathematics, Linear Algebra, Object-Oriented Programming, Software Engineering, Machine Learning

RESEARCH

Topic-aware Summarization and Evaluation

Nankai

Supervised by Prof. Zhenglu Yang

Jun. 2018 - Feb. 2019

- Document Summarization with VHTM: Variational Hierarchical Topic-Aware Mechanism
 - » Propose a variational hierarchical model which joints topic inference and summarization in an end-to-end manner. It's the first attempt to perform summarization without resorting to a pre-trained topic model.
 - » Topic-related parts with different granularities in original documents are extracted and employed via a hierarchical topic-aware technique.
 - » The extensive experiments based on CNN/DM demonstrate that besides achieving superior summarizing performance, VHTM can also yield similar topic relevance summaries.

Highlight: One paper has been accepted by AAAI'20.

- Multi-length Document Summarization and Topic-Oriented Evaluation
 - » Propose a new summary evaluation metric based on the topic consistency between articles and summaries.
 - » Introduce a topic plug-in that incorporates topic information into variant multi-length document summarization models via a pre-trained topic inference model.

Multi-modal Summarization

Nankai

Supervised by Prof. Zhenglu Yang

Mar. 2019 - May. 2019

- Multi-modal Summarization for Video-containing Documents
 - » Introduce a novel task that automatically generates a textual summary with significant images from the multi-modal data associated with an article and its corresponding video. A related content-rich multi-modal dataset is constructed for further research.
 - » Propose a bi-stream strategy that simultaneously summarizes articles and videos. The bi-hop attention and improved late fusion are employed to refine information from asynchronous multi-modal data.

Biologically-inspired Language Modeling

Riken

Supervised by Dr. Jun Igarashi

Jun. 2019 - Nov. 2019

- Language Modeling via Adaptational Spiking-inspired Neuron Network
 - » Propose neuronal adaptation into the spiking unit in deep learning structure which enables the neurons to explore long-range temporal data.
 - » Introduce an end-to-end model trained by backpropagation to combine Artificial Neuron Network (ANN) and Spiking Neuron Network (SNN), and implement it solving Language Modelling.

Dialogue Summarization

Supervised by Dr. Yating Zhang and Dr. Changlong Sun

Alibaba Damo Academy

May. 2020 - Now

■ Unsupervised Dialogue Summarization

» Propose an unsupervised strategy for dialogue summarization called RepSum, which roots from the hypothesis that a superior summary approximates a replacement of the original dialogue. It trains the unsupervised summarization by self-supervised signals via the auxiliary tasks.

» Based on the RepSum strategy, we propose the corresponding model and employ it to the extractive-based and abstractive-based summarization.

Highlight: One paper is under review of AAAI 2021.

EXPERIENCE

Alibaba Damo Academy

Research Intern

Hangzhou, China

May. 2020 - Now

- Language Technology Lab
- Supervisor: Dr. Yating Zhang and Dr. Changlong Sun
- Project: Dialogue Summarization

Institute of Physical and Chemical Research (Riken)

Research Intern

Saitama, Japan

Jun. 2019 - Nov. 2019

- Computational Engineering Application Unit
- Supervisor: Dr. Jun Igarashi
- Project: Biologically-inspired Language Modeling

The University of Texas at Austin

Visiting Student

Texas, U.S.

Aug. 2017

- College of Computer Science
- Courses: Big Data, Deep Learning Foundation

RELATED PAPERS

1. **Xiyan Fu**, Jun Wang, Jinghan Zhang, Jinmao Wei, Zhenglu Yang, "Document Summarization with VHTM: Variational Hierarchical Topic-Aware Mechanism", in Proceedings of the AAAI Conference on Artificial Intelligence, AAAI'20, pp. 7740-7747.

2. **Xiyan Fu**, Yating Zhang, Tianyi Wang, Xiaozhong Liu, Changlong Sun, Zhenglu Yang, "RepSum: Unsupervised dialogue summarization based on Replacement Strategy", in submission, AAAI'21.

3. **Xiyan Fu**, Jun Wang, Adam Jatowt, Zhenglu Yang, "Multi-modal Summarization for Video-containing Documents", in revising.

4. **Xiyan Fu**, Zhe Sun, Morteza Heidarinejad, Zhenglu Yang, Jun Igarashi, Ryaturo Himeno, "Language Modeling via Adaptational Spiking-inspired Neuron Network", in revising.

TECHNICAL STRENGTH

Programming	Python, C/C++, Java
Toolkit	Tensorflow, PyTorch, Chainer
Language	Chinese(native language), English(fluent), Japanese(basic)

HONOURS&AWARDS

- 20' AAAI Student Scholarship
- 19' Best poster of Engineering Group in Riken Summer School (top 5%)
- 17' The Second Prize Scholarship of Nankai University (top 10%)
- 16' Gongneng Scholarship of Nankai University (top 20%)