

KAIQIANG SONG

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Tencent AI Lab

Suite 1100, 929 108th Ave NE, Bellevue, WA 98004

EDUCATION

Department of Computer Science, University of Central Florida Ph.D. in Computer Science	<i>August 2016 - May 2021</i> Overall GPA: 3.73/4.00
Department of Computer Science, Fudan University Bachelor of Science	<i>July 2012 - June 2016</i> Overall GPA: 3.24/4.00

RESEARCH INTEREST

My research interests center on advancing artificial intelligence (AI) through fundamental research in machine learning (ML), natural language processing (NLP), and large language models (LLM). Specifically, I'm driven to create AI systems that not only push the boundaries of model architectures, training, and inference methods but also have practical applications, such as text summarization and text generation.

I'm passionate about optimizing model architectures and training strategies to enhance AI performance. Moreover, I'm dedicated to harnessing the creative potential of AI for applications like automated content summarization and personalized text generation. My goal is to contribute to both the theoretical underpinnings of AI and its tangible, real-world impact.

In summary, my research pursuits revolve around the synergy of foundational AI research and its practical applications, with a strong focus on innovation in ML, NLP, LLM, and their role in revolutionizing information processing and content generation.

- Natural Language Processing
- Large Language Model
- Summarization
- Real World AI Application

WORKING EXPERIENCE

Tencent <i>Bellevue, Washington, USA</i>	May 2021 - present <i>Senior Research Scientist</i>
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- Develop Fundamental and impactful technologies for ML, NLP, and LLM.
- Lead Summarization Research and provide the relative applications support including (e.g. VooV Meeting, QQ Web-Browser, Effdit, and Sougou Baike).
- Managing computation and storage resources for Tencent Seattle AI Lab.
- Communicating with Infrastructure and Platform Teams for better support of daily research.
- Participate in developing Tencent Foundation Model HunyuanAide (a ChatGPT-like AI-Bot)
- 2022-H2 & 2023-H1 Tencent AI Lab SEVP Award

Tencent <i>Bellevue, Washington, USA</i>	May 2020 - August 2020 <i>Research Intern</i>
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- Working on podcast summarization challenge (**TREC2020**)
- Under the guidance of Dr. Chen Li, Dr. Xiaoyang Wang and Dr. Dong Yu

- At Tencent AI Lab Seattle Group

Robert Bosch LLC
Sunnyvale, California, USA

May 2019 - August 2019
Research Intern

- Working on text summarization and Information Retrieval tasks
- Under the guidance of Dr. Bingqing Wang and Dr. Zhe Feng
- At Bosch Corporate Research, Human Machine Interface Group 2 (CR/HMI-2).

FULL PUBLICATION

Year 2023

- MMC: Advancing Multimodal Chart Understanding with Large-scale Instruction Tuning
Fuxiao Liu, Xiaoyang Wang, Wenlin Yao, Jianshu Chen, **Kaiqiang Song**, Sangwoo Cho, Yaser Yacoob, Dong Yu
ArXiv.
- Unsupervised Multi-document Summarization with Holistic Inference
Haopeng Zhang, Sangwoo Cho, **Kaiqiang Song**, Xiaoyang Wang, Hongwei Wang, Jiawei Zhang, Dong Yu
In *The 13th International Joint Conference on Natural Language Processing and the 3rd Conference of the Asia-Pacific Chapter of the Association for Computational Linguistics (IJCNLP-AACL)*, 2023.
- Skills-in-Context Prompting: Unlocking Compositionality in Large Language Models
Jiaao Chen, Xiaoman Pan, Dian Yu, **Kaiqiang Song**, Xiaoyang Wang, Dong Yu, Jianshu Chen
Submitted to **ICLR**.
- Bridging Continuous and Discrete Spaces: Interpretable Sentence Representation Learning via Compositional Operations
James Y Huang, Wenlin Yao, **Kaiqiang Song**, Hongming Zhang, Muhao Chen, Dong Yu
In *Proceedings of the Conference on Empirical Methods in Natural Language Processing (EMNLP)*, 2023.
- PIVOINE: Instruction Tuning for Open-world Information Extraction
Keming Lu, Xiaoman Pan, **Kaiqiang Song**, Hongming Zhang, Dong Yu, Jianshu Chen
In *Proceedings of the Conference on Empirical Methods in Natural Language Processing (EMNLP Findings)*, 2023.
- Analyzing Influential Factors in Human Preference Judgments via GPT-4
Yebowen Hu, **Kaiqiang Song**, Sangwoo Cho, Xiaoyang Wang, Hassan Foroosh, Fei Liu
In *Proceedings of the Conference on Empirical Methods in Natural Language Processing (EMNLP)*, 2023.
- Open-Domain Event Graph Induction for Mitigating Framing Bias
Siyi Liu, Hongming Zhang, Hongwei Wang, **Kaiqiang Song**, Dan Roth, Dong Yu
Submitted to **EMNLP 23**.
- Effdit: An Assistant for Improving Writing Efficiency
Shuming Shi, Enbo Zhao, Wei Bi, Deng Cai, Leyang Cui, Xinting Huang, Haiyun Jiang, Duyu Tang, **Kaiqiang Song**, Longyue Wang, Chenyan Huang, Guoping Huang, Yan Wang, Piji Li
Accepted at *61st Annual Meeting of the Association for Computational Linguistics (ACL Demo)*, 2023.
- Generating User-Engaging News Headlines
Pengshan Cai, **Kaiqiang Song**, Sangwoo Cho, Hongwei Wang, Xiaoyang Wang, Hong Yu, Fei

Liu, Dong Yu

Accepted at *61st Annual Meeting of the Association for Computational Linguistics (ACL)*, 2023.

- OASum: Large-Scale Open Domain Aspect-based Summarization
Xianjun Yang*, **Kaiqiang Song***, Sangwoo Cho, Xiaoyang Wang, Xiaoman Pan, Linda Petzold, Dong Yu
Accepted at *61st Annual Meeting of the Association for Computational Linguistics (ACL Findings)*, 2023, * **Equal Contribution**.
- How do Words Contribute to Sentence Semantics? Revisiting Sentence Embeddings with a Perturbation Method
Wenlin Yao, Lifeng Jin, Hongming Zhang, Xiaoman Pan, **Kaiqiang Song**, Dian Yu, Dong Yu, Jianshu Chen In *Proceedings of the 17th Conference of the European Chapter of the Association for Computational Linguistics, (EACL)*, 2023.

Year 2022

- Saliency Allocation as Guidance for Abstractive Summarization
Fei Wang*, **Kaiqiang Song***, Hongming Zhang, Lifeng Jin, Sangwoo Cho, Wenlin Yao, Xiaoyang Wang, Muhao Chen, Dong Yu
In *Proceedings of the Conference on Empirical Methods in Natural Language Processing (EMNLP)*, 2022, ***Equal Contribution**.
- Toward Unifying Text Segmentation and Long Document Summarization
Sangwoo Cho, **Kaiqiang Song**, Xiaoyang Wang, Fei Liu, Dong Yu
In *Proceedings of the Conference on Empirical Methods in Natural Language Processing (EMNLP)*, 2022, **Oral**.
- NarraSum: A Large-Scale Dataset for Abstractive Narrative Summarization
Chao Zhao, Faeze Brahman, **Kaiqiang Song**, Wenlin Yao, Yu Dian, Snigdha Chaturvedi
In *Proceedings of the Conference on Empirical Methods in Natural Language Processing (EMNLP Findings)*, 2022.
- Meta-Learning without Data via Wasserstein Distributionally-Robust Model Fusion
Zhenyi Wang, Xiaoyang Wang, Li Shen, Qiuling Suo, **Kaiqiang Song**, Dong Yu, Yan Shen, Mingchen Gao
Accepted at *The Conference on Uncertainty in Artificial Intelligence (UAI)*, 2022.
- Towards Abstractive Grounded Summarization of Podcast Transcripts
Kaiqiang Song, Chen Li, Xiaoyang Wang, Dong Yu, Fei Liu
In *60th Annual Meeting of the Association for Computational Linguistics (ACL)*, 2022.
- Learning-by-Narrating: Narrative Pre-training for Zero-Shot Dialogue Comprehension
Chao Zhao, Wenlin Yao, Dian Yu, **Kaiqiang Song**, Dong Yu, Jianshu Chen
In *60th Annual Meeting of the Association for Computational Linguistics (ACL Findings)*, 2022.

Year 2021

- CATE: Computation-aware Neural Architecture Encoding with Transformers
Shen Yan, **Kaiqiang Song**, Fei Liu, Mi Zhang
In *Proceedings of the 38th International Conference on Machine Learning (ICML)*, 2021 (**Long Talk**)
- A New Approach to Overgenerating and Scoring Abstractive Summaries
Kaiqiang Song, Bingqing Wang, Zhe Feng, Fei Liu
In *Proceedings of the North American Chapter of the Association for Computational Linguistics (NAACL)*, 2021

Year 2020 and Before

- Automatic Summarization of Open-Domain Podcast Episodes
Kaiqiang Song, Chen Li, Xiaoyang Wang, Dong Yu, Fei Liu
In *Proceedings of The Twenty-Ninth Text REtrieval Conference (TREC)*, 2020
- Better Highlighting: Creating Sub-Sentence Summary Highlights
Sangwoo Cho, **Kaiqiang Song**, Chen Li, Dong Yu, Hassan Foroosh and Fei Liu
In *Proceedings of the Conference on Empirical Methods in Natural Language Processing (EMNLP)*, 2020
- Controlling the Amount of Verbatim Copying in Abstractive Summarization
Kaiqiang Song, Bingqing Wang, Zhe Feng, Liu Ren and Fei Liu
In *Proceedings of the Thirty-Fourth AAAI Conference on Artificial Intelligence (AAAI)*, 2020.
- Joint Parsing and Generation for Abstractive Summarization
Kaiqiang Song, Logan Lebanoff, Qipeng Guo, Xipeng Qiu, Xiangyang Xue, Chen Li, Dong Yu and Fei Liu
In *Proceedings of the Thirty-Fourth AAAI Conference on Artificial Intelligence (AAAI)*, 2020.
- Scoring Sentence Singletons and Pairs for Abstractive Summarization
Logan Lebanoff, **Kaiqiang Song**, Franck Dernoncourt, Doo Soon Kim, Seokhwan Kim, Walter Chang, Fei Liu
In *57th Annual Meeting of the Association for Computational Linguistics (ACL)*, 2019.
- Adapting the Neural Encoder-Decoder Framework from Single to Multi-Document Summarization
Logan Lebanoff, **Kaiqiang Song**, and Fei Liu
In *Proceedings of the Conference on Empirical Methods in Natural Language Processing (EMNLP)*, 2018.
- Structure-Infused Copy Mechanisms for Abstractive Summarization
Kaiqiang Song, Lin Zhao, and Fei Liu.
In *Proceedings of the International Conference on Computational Linguistics (COLING)*, 2018.
(**Oral Presentation**)

COMPETITION

- Our system won the **1st Place** with Automatic Evaluation and **2nd Place** with Human Evaluation in **Podcast Summarization Challenge** at **TREC 2020**.

TECHNICAL STRENGTHS

Major Programming Languages	Python, C, C++
Other Programming Languages	LaTeX, Java, PASCAL, SQL, HTML, R, php, json, VHDL
Deep-Learning Platform	Megatron, Huggingface, Pytorch, Theano

PROGRAMMING CONTEST ACHIEVEMENTS

Olympiad in Information (OI) 2009 - 2011
As a member of Shandong Province OI Team

- Won the 1st place in the ‘National Olympiad in Information in Province’ (NOIP) in November 2010
- Won the 2nd place in the ‘Shandong Province Team Selection Contest’ (SDTSC) in March 2011
- Won the Silver Medal in ‘Asia Pacific Informatics Olympiad’ (APIO) in May 2011
- Won the Bronze Medal in ‘Chinese Team Selection Contest’ (CTSC) in May 2011
- Won the Silver Medal in ‘National Olympiad in Informatics’ (NOI) in August 2011

ACM International Collegiate Programming Contest (ACM-ICPC)

2012 - 2013

As a member of Fudan ACM-ICPC Team

- Won the 7th team in ‘Fudan ACM Team Selection Contest’ in July 2012
- Won the 4th place in ‘Fudan ACM individual Selection Contest’ in April 2013

COMMUNITY SERVICE

- Area Chair of NLPCC 2023
- Reviewer of AAAI 2024, 2022, 2021, 2020
- Reviewer of ACL ARR 2022-6, 2022-2, 2022-1, 2021-11, 2021-10
- Reviewer of ACL 2023, 2021, 2020
- Reviewer of EACL 2021
- Reviewer of EMNLP 2022, 2021, 2020, 2019 Summarization Workshop
- Reviewer of NAACL 2021
- Reviewer of CCL 2019, 2020
- Reviewer of NLPCC 2017, 2022
- Reviewer of TALLIP 2020
- Reviewer of TKDD 2019-12, 2019-01