Meng Cao

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EDUCATION

McGill University / Mila - Québec AI Institute   Jan. 2021 – Present
Ph.D. in Computer Science   GPA: 4.0/4.0
Advisor: Jackie Chi Kit Cheung

McGill University / Mila - Québec AI Institute   Sept. 2019 – Jan. 2021
M.Sc. in Computer Science   GPA: 4.0/4.0
Advisor: Jackie Chi Kit Cheung

Northeastern University (China)   Sept. 2015 – June 2019
Major in Software Engineering   GPA: 3.96/4.0
Ranking: 1/59

RESEARCH INTERESTS

Natural Language Processing, Text Summarization, Reinforcement Learning, Machine Learning

PUBLICATIONS

[1] Responsible AI Considerations in Text Summarization Research: A Review of Current Practices
Yu Lu Liu, **Meng Cao**, Su Lin Blodgett, Jackie Chi Kit Cheung, Alexandra Olteanu and Adam Trischler
(In Submission to ACL 2023)

[2] Analyzing Multi-Sentence Aggregation in Abstractive Summarization via the Shapley Value
Jingyi He, **Meng Cao** and Jackie C. K. Cheung
(In Submission to ACL 2023)

[3] Systematic Rectification of Language Models via Dead-end Analysis
Meng Cao, Mehdi Fatemi, Jackie CK Cheung and Samira Shabanian
To appear at ICLR 2023

[4] Learning with Rejection for Abstractive Text Summarization
Meng Cao, Yue Dong, Jingyi He and Jackie C. K. Cheung
In proceedings of the Conference on Empirical Methods in Natural Language Processing (EMNLP), 2022

[5] Hallucinated but Factual! Inspecting the Factuality of Hallucinations in Abstractive Summarization
Meng Cao, Yue Dong and Jackie C. K. Cheung.
In Annual Meeting of the Association for Computational Linguistics (ACL), 2022

[6] A Survey on Neural Abstractive Summarization Methods and Factual Consistency of Summarization
Meng Cao
ArXiv Preprint, 2021

[7] Factual Error Correction for Abstractive Summarization Models
Meng Cao, Yue Dong, Jiapeng Wu and Jackie C. K. Cheung
In proceedings of the Conference on Empirical Methods in Natural Language Processing (EMNLP), 2020

[8] TeMP: Temporal Message Passing for Temporal Knowledge Graph Completion
Jiapeng Wu, **Meng Cao**, Jackie Chi Kit Cheung, William L. Hamilton
In proceedings of the Conference on Empirical Methods in Natural Language Processing (EMNLP), 2020

[9] Referring Expression Generation Using Entity Profiles
Meng Cao and Jackie Chi Kit Cheung
In proceedings of the Conference on Empirical Methods in Natural Language Processing and the 9th International Joint

Conference on Natural Language Processing (EMNLP-IJCNLP), 2019

INDUSTRY EXPERIENCES

Microsoft Research Lab – Montréal   Apr. 2022 – Present
Machine Learning Research Intern   Advisor: Samira Shabanian & Mehdi Fatemi
- Mitigate toxicity in large language model using reinforcement learning approach

Huawei Noah's Ark Lab – Canada, Montreal   May 2021 – March 2022
Applied Machine Learning Research Intern   Advisor: Mehdi Rezagholizadeh
- Knowledge distillation for text generation tasks
- Data augmentation for knowledge distillation using cluster labels

Borealis AI – Canada, Toronto   May 2020 – August 2020
Research Intern, Alan Team   Advisor: Yanshuai Cao
- Build a distributed data-parallel Text-to-SQL system.
- Applied meta-learning algorithms (MAML, Reptile, MetaReg) in cross-database semantic parsing task.
- Achieved promising results in the zero-shot domain transfer setting.

IBM Research – China, Beijing   September 2018 – June 2019
Research Assistant Intern, Information Analytics Team   Advisor: Shiwan Zhao
- Chinese word segmentation: responsible for training Chinese word segmentation model. Proposed a novel segmentation model based on n-gram and information entropy to segment the input sentences.
- Neural Architecture Search: PyTorch implementation of Google's ENAS neural architecture algorithm.
- Migrated a neural network model which is implemented in Keras into Java environment using Deeplearning4j.

PRESENTATIONS AND TALKS

Factual Error Correction for Abstractive Summarization Models (Poster)   Nov., 2020
EMNLP 2020   Online
Referring Expression Generation Using Entity Profiles (Poster)   Nov., 2019
EMNLP 2019   Hong Kong, China
Transfer Learning for Cross-Domain Sequence Tagging Tasks (Oral)   March, 2019
FICC 2018   San Francisco, USA

SCHOLARSHIPS

China National Scholarship (¥ 16,000)   2015-2016, 2017-2018
The Chinese Government, among top-0.2% all undergraduates in China
The Bao Gang Education Scholarship (¥ 10,000)   September 2018
China BAOWU Steel Group, selected rate: 4/20000 in NEU
The First-Class Scholarship in Northeastern University (¥ 9,000)   2015-2016, 2016-2017, 2017-2018
Northeastern University, among top-3% undergraduates in NEU

AWARDS

"Top Ten Undergraduates" in Northeastern University   May 2018
Northeastern University, among top-0.2% undergraduates in NEU
The Excellent Performance Award for IBM Undergraduate Innovation Lab Program   April 2017
IBM Research China, Beijing
The First Prize in the 8th National College Students Mathematics Competition   October 2016
Chinese Mathematical Society
The First Prize in the 9th National College Students Mathematics Competition   October 2017
Chinese Mathematical Society

The Meritorious Winner for the Mathematical Contest in Modeling (MCM/ICM), 2018　　　February 2018
COMAP, the Consortium for Mathematics and Its Applications (USA)
The Honorable Mention for the Mathematical Contest in Modeling (MCM/ICM), 2017　　　February 2017
COMAP, the Consortium for Mathematics and Its Applications (USA)

RESEARCH FUNDING

Mitacs Globalink Research Internship ($19,500)　　　June 2018 – September 2018
Mitacs Globalink summer research internship program ($4,500) & Mitacs graduate student funding ($15,000)

SKILLS

Programming Languages: skilled in: Java, Python (especially NumPy, PyTorch); familiar with: Tensorflow, JavaScript, SQL

Extensive knowledge of: Natural Language Processing, Text Summarization, Deep Learning, Reinforcement Learning