# Dr. MA, Jing

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## Education

- **Ph.D., Information System – Systems Engineering and Engineering Management**
  The Chinese University of Hong Kong, 2016.08 – 2020.02
  Department of Systems Engineering and Engineering Management
  Supervisor: Kam-Fai Wong (CUHK) | Wei Gao (Victoria University of Wellington, New Zealand)
- **M.S., Computer Science – Telecommunications Engineering**
  Beijing University of Posts and Telecommunications, 2013.08 – 2016.03
- **B.Eng., Telecommunications Engineering**
  Beijing University of Posts and Telecommunications, 2009.09 – 2013.06
  School of Information and Communications Engineering

## Research Interests

- Machine Learning – Statistical Relational Learning, Supervised or Weak supervised learning, Deep Learning
- Social Media Analytics – Twitter, Sina Weibo, Facebook, etc
- Natural Language Processing, Explainable Machine Learning
- Information Retrieval – Opinion Mining, Question and Answering, Dialog System
- Information Verification – Rumor Detection, Stance Classification, Fact Checking, Truth Discovery

## Selected Publications

– **Conference Papers**

- Zero-Shot Rumor Detection with Propagation Structure via Prompt Learning
  Hongzhan Lin, Pengyao Yi, **Jing Ma**∗, Haiyun Jiang, Ziyang Luo, Shuming Shi, Ruifang Liu
  **AAAI 2023**: The Thirty-Seventh AAAI Conference on Artificial Intelligence, Feb 2023, *Washington DC*.
- Conditioned Masked Language and Image Modeling for Image-Text Dense Retrieval
  Ziyang Luo, Yadong Xi, Rongsheng Zhang, Gongzheng Li, Zeng Zhao, **Jing Ma**∗
  **EMNLP 2022**: The 2022 Conference on Empirical Methods in Natural Language Processing (Findings), Dec 2022, *Abu*.
- A Coarse-to-fine Cascaded Evidence-Distillation Neural Network for Explainable Fake News Detection
  Zhiwei Yang, **Jing Ma**∗, Hechang Chen, Hongzhan Lin, Ziyang Luo and Yi Chang
  **COLING 2022**: The 29th International Conference on Computational Linguistics, Oct 2022, *Gyeongju*.
- DecBERT: Enhancing the Language Understanding of BERT with Causal Attention Masks
  Ziyang Luo, Yadong Xi, **Jing Ma**, Zhiwei Yang, Xiaoxi Mao, Changjie Fan, Rongsheng Zhang
  **NAACL 2022:** 2022 Annual Conference of the North American Chapter of the Association for Computational Linguistics (Findings), Jul 2022, *Seattle*.

- Detect Rumors in Microblog Posts for Low-Resource Domains via Adversarial Contrastive Learning

  Hongzhan Lin, **Jing Ma**\*, Liangliang Chen, Zhiwei Yang, Mingfei Cheng, Guang Chen

  **NAACL 2022:** 2022 Annual Conference of the North American Chapter of the Association for Computational Linguistics (Findings), Jul 2022, *Seattle.*

- A Weakly Supervised Propagation Model for Rumor Verification and Stance Detection with Multiple Instance Learning

  Ruichao Yang, **Jing Ma**, Hongzhan Lin and Wei Gao

  **SIGIR 2022:** The 45th International ACM SIGIR Conference on Research and Development in Information Retrieval, Jul 2022, *Madrid.*

- AMIF: A Hybrid Model for Improving Fact Checking in Product Question Answering

  Hongzhan Lin, Liangliang Chen, **Jing Ma**\*, Zhiwei Yang and Guang Chen

  **IJCNN 2022:** 2022 International Joint Conference on Neural Networks, Jul 2022, *Padua.*

- Rumor Detection on Twitter with Claim-Guided Hierarchical Graph Attention Networks

  Hongzhan Lin, **Jing Ma**, Mingfei Cheng, Zhiwei Yang, Liangliang Chen and Guang Chen

  **EMNLP 2021**: The 2021 Conference on Empirical Methods in Natural Language Processing, Nov 2021, *online*

- HiTRANS: A Hierarchical Transformer Network for Nested Named Entity Recognition

  Zhiwei Yang, **Jing Ma**, Hechang Chen, Yunke Zhang and Yi Chang

  **EMNLP 2021**: The 2021 Conference on Empirical Methods in Natural Language Processing (Findings), Nov 2021.

- Debunking Rumors on Twitter with Tree Transformer

  **Jing Ma** and Wei Gao

  **COLING 2020**: The 28th International Conference on Computational Linguistics, Dec 2020, *online*

- AnswerFact: Fact Checking in Product Question Answering

  Wenxuan Zhang, Yang Deng, **Jing Ma**, Wai Lam

  **EMNLP 2020**: The 2020 Conference on Empirical Methods in Natural Language Processing, Nov 2020, *online*

- Attention-based Multi-level Feature Fusion for Named Entity Recognition

  Zhiwei Yang, Hechang Chen, Jiawei Zhang, **Jing Ma,** Yi Chang

  **IJCAI 2020**: The 29th International Joint Conference on Artificial Intelligence, July 2020, Yokohama, Japan

- Review-guided Helpful Answer Identification in E-commerce

  Wenxuan Zhang, Wai Lam, Yang Deng, **Jing Ma**

  **WWW 2020**: The Web Conference 2020, April 2020, Taipei

- Sentence-Level Evidence Embedding for Claim Verification with Hierarchical Attention Networks

  **Jing Ma**, Wei Gao, Shafiq Joty, and Kam-Fai Wong

  **ACL 2019**: The 57th Annual Meeting of the Association for Computational Linguistics, July 2019, Florence, Italy

- Detect Rumors on Twitter by Promoting Information Campaigns with Generative Adversarial Learning

  **Jing Ma**, Wei Gao, and Kam-Fai Wong

  **WWW 2019**: The Web Conference 2019, May 2019, San Francisco, USA

- Rumor Detection on Twitter with Tree-structured Recursive Neural Networks

  **Jing Ma**, Wei Gao, and Kam-Fai Wong

  **ACL 2018**: The 56th Annual Meeting of the Association for Computational Linguistics, July 2018, Melbourne, Australia

- Detect Rumor and Stance Jointly by Neural Multi-task Learning

  **Jing Ma**, Wei Gao, and Kam-Fai Wong

  **WWW 2018** (Misinformation track): The Web Conference 2018, April 2018, Lyon, France

- Detect Rumors in Microblog Posts Using Propagation via Kernel Learning

  **Jing Ma**, Wei Gao, and Kam-Fai Wong

  **ACL 2017**: The 55th Annual Meeting of the Association for Computational Linguistics, July 2017, Vancouver, Canada

- From Retweet to Believability: Utilizing Trust to Identify Rumor Spreaders on Twitter

Bhavtosh Rath, Wei Gao, **Jing Ma**, and Jaideep Srivastava

**ASONAM 2017**: The 2017 IEEE/ACM International Conference on Advances in Social Networks Analysis and Mining, August 2017, Sydney

- Detecting Rumors from Microblogs with Recurrent Neural Networks

  **Jing Ma**, Wei Gao, Prasenjit Mitra, Sejeong Kwon, Bernard J. Jansen, Kam-Fai Wong, and Meeyoung Cha

  **IJCAI 2016**: The 25th International Joint Conference on Artificial Intelligence, July 2016, New York, USA

- Detect Rumors Using Time Series of Social Context Information on Microblogging Websites

  **Jing Ma**, Wei Gao, Zhongyu Wei, Yueming Lu, and Kam-Fai Wong

  **CIKM 2015**: The 24th ACM International Conference on Information and Knowledge Management, October 2015, Melbourne, Australia

– **Journal Papers**

- Context-aware Attentive Multi-level Feature Fusion for Named Entity Recognition

  Zhiwei Yang, **Jing Ma**, Hechang Chen, Jiawei Zhang and Yi Chang

  **TNNLS:** IEEE Transactions on Neural Networks and Learning Systems, 2022**.**

- Improving Rumor Detection by Promoting Information Campaigns with Transformer-based Generative Adversarial Learning

  **Jing Ma**, Jun Li, Wei Gao, Yang Yang, and Kam-Fai Wong

  **TKDE:** IEEE Transactions on Knowledge and Data Engineering, 2021.

- An Attention-based Hybrid Model for Rumor Detection with Tree-structured Recursive Neural Networks

  **Jing Ma**, Wei Gao, Shafiq Joty, and Kam-Fai Wong

  **TIST:** ACM Transactions on Intelligent Systems and Technology, 2020, 11(4): 1-28

- Utilizing Computational Trust to Identify Rumor Spreaders on Twitter

  Bhavtosh Rath, Wei Gao, **Jing Ma**, and Jaideep Srivastava

  **SNAM**: Social Network Analysis and Mining, 8:64, December 2018, Springer

– **Workshop Papers**

- Cross-lingual COVID-19 Fake News Detection

  Jiangshu Du, Yingtong Dou, Congying Xia, Limeng Cui, **Jing Ma**, and Philip Yu

  **SDM 2021**: The First IEEE International Workshop on Social Data Mining in the Post-pandemic Era @ICDM 2021

- UIR-PKU: Twitter-OpinMiner System for Sentiment Analysis in Twitter at SemEval 2015

  Xu Han, Binyang Li, **Jing Ma**, Yuxiao Zhang, Gaoyan Ou, Tengjiao Wang, Kam-Fai Wong

  **SemEval 2015**: The 9th International Workshop on Semantic Evaluation @NAACL-HLT 2015

– **Book Chapters**

- Social Media Content Analysis: Natural Language Processing and Beyond

  Kam-Fai Wong, Wei Gao, Ruifeng Xu, Wenjie Li

  **World Scientific Publishing:**

  **Chapter 6**: Detect Rumors Using Time Series of Social Context Information on Microblogging

## Recent Research Grants as Principal Investigator (PI)

– "Automatic Fact Verification via Reasoning Across Multiple Sourced Data", **PI**, The AI-Info Communication Study (AIS)

Scheme, HK$ 150,000 [Jan 2021 – Aug 2022]. **Completed**.

- "Weakly Supervised Deep Learning for Robust Opinion Mining on Social Media with Minimal Annotation", **PI**, One-off Tier 2 Start-up Grant, HK$ 350,000 [Aug 2022 – Aug 2024], **On-going**.
- "Conversation-based Reasoning for Explainable Fake News Detection via Weakly Supervised Evidence Detection", PI, RGC Early Career Scheme, HK$ 969,680 [Jan 2023 – Dec 2025], **On-going**.
- "基于社交关系的新闻自动摘要与虚假信息对抗", PI, 国家自然科学基金-青年科学基金项目, RMB 300,000 [Jan 2023 – Dec 2025], **On-going**.

## Academic Services

- **Program Committee Member:**
  - WSDM 2023, EACL 2023, AACL 2022, WWW2021 2023, AAAI 2019-2022, ACL 2019, EMNLP 2019, AI 2019
- **Journal Reviewer:**
  - IEEE Transactions on Knowledge and Data Engineering (TKDE)
  - ACM Transactions on Intelligent Systems and Technology (TIST)
  - IEEE Transactions on Neural Networks and Learning Systems (TNNLS)
  - ACM Transactions on Multimedia Computing, Communications and Applications (TOMM)
  - Neurocomputing
- **Conference Reviewer:** EMNLP 2018
- **External Reviewer:** ACL 2015-2018, EMNLP 2015-2017, SIGIR 2016-2017, CIKM 2016-2018, PACLIC 2016, ASONAM 2016-2019

- **Invited Talks:**
  - "Combating Misinformation in the Era of Social Media" at Jilin University, China, Sep 13rd, 2022.
  - "Combating Misinformation in the Era of Social Media" at Fudan University, China, Jul 1st, 2022.
  - "Introduction to Natural Language Processing" at Agricultural Bank of China, China, Sep 27th, 2019.
  - "Detect Rumors on Twitter by Promoting Information Campaigns with Generative Adversarial Learning" at Singapore Management University, Singapore, Apr 3rd, 2019.
  - "Introduction to Rumor-related Research from Social media" at Beijing University of Posts and Telecommunications, China, Mar 29th, 2018.
  - "Detect Rumor and Stance Jointly by Neural Multi-task Learning" at National Taiwan University, Taiwan, Apr 12th, 2018.
  - "Deep Neural Models on Rumor Detection from Social Media" at University of Electric Science and Technology of China, China, Sep 9th, 2018.

## Academic Experiences

| Visiting Scholar | Institute for Basic Science (South Korea) | Dec.2019 – Feb.2020 |
|---|---|---|

- **Responsibilities:** Consistency recognition for Wikimedia services, hate speech detection, etc
- **Supervisor: Assoc Prof.** Meeyoung Cha
- Data Science Group

| Visiting Scholar | Nanyang Technological University (Singapore) | Dec.2018 – Aug.2019 |
|---|---|---|

- **Responsibilities:** Claim Verification and Fact Checking from multi-sourced web outlets.
- **Supervisor: Assit Prof.** Shaffiq Rayhan Joty
- Dept. NLP Lab at School of Computer Science and Engineering (SCSE)

**Research Intern**                            **Tencent AI lab (Shenzhen, China)**           Sep. 2017 – Jan. 2018

- **Responsibilities:** Analytics on Dialog and Text.
- Natural Language Processing Center

**Junior Research Assistant**      **The Chinese University of Hong Kong (Hong Kong)**      Jan. 2015 – Jul. 2016

- **Responsibilities:**
- Developed a method to detect rumors using time series structures on microblogging websites. By analyzing the propagation of tweets/microblogs, we argued that it is of importance not only looking at the overall properties and the properties of individual messages, but also studying the changes or the trends of these properties along the lifecycle.
- Collected two datasets from microblogging websites (Twitter and Sina Weibo). Survey and initialize general definitions of "rumor detection" task. Propose effective approaches for detecting rumors at early stage after their initial broadcast.

**R&D Engineer Intern**              **Baidu NLP Department (Beijing, China)**          Jan. 2014 – May. 2014

- **Responsibilities:**
- Lexical Analysis: parsing sentence into words, part-of-speech (POS) tagging, named entity recognition (NER), semantic representation. Syntactic Analysis: dependency parsing, semantic role analysis.
- Intention Mining: Matching keywords in query precisely. Built query corpus and domain keywords dictionary from search engine logs.
- Semantic Analysis Algorithm for Query Searching: pattern-based method, rule-based method (manually make rules for dependency parsing results based on knowledge base), logistic-based method, transition-based method (define basic expression, generate semantic label between two words).

**R&D Engineer Intern**                    **Ganji.com (Beijing, China)**           May. 2013 – Oct. 2013

- **Responsibilities:**
- Predicted click through rate (CTR) based on click logs on sponsored advertising, using linear regression model.
- Developed Recommend system for e-product based on history logs (buying, adding to cart, clicking and adding to favorites behaviors), using collaborative filtering algorithm.
- Researched and designed an automatic pricing system for e-products. Provided technical support for marketing and promotion arrangements.
- Awarded "**Quarterly Star of Ganji**".

## Recognition, Achievements, and Events

- "An Attention-based Rumor Detection Model with Tree-structured Recursive Neural Networks" is recognized as Top Five Outstanding TIST Articles.
- Recognised as one of "The 2022 Women in AI" by AMiner.
- Named Recipients of "2022 AI 2000 Most Influential Scholar Award Honorable Mention" by AMiner.
- Recognised as "The World's top 2% scientists" released by Stanford University.
- Around 30 publications in refereed journals and conferences, including ACL, WWW, EMNLP, IJCAI, TKDE and TIST, received a total of 2600+ citations, with an h-index 13.

## Teaching & Tutorials

- **COMP 4136:** Natural Language Processing, Fall 2021, 2022                    [Lecture]
- **COMP 2865:** Fundamental of Data Analysis and Management, Fall 2021          [Lecture]
- **COMP4125/7820:** Visual Analytics & Decision Support, Spring 2021, 2022        [Lecture]

- **COMP4085**: Selected topics in Information Intelligence , Fall 2020 [Lecture]
- **SEEM3450:** Engineering Innovation & Entrepreneurship, Fall 2016, 2017, 2018 [Teaching Assistant]
- **SEEM3550:** Fundamentals in Information Systems, Spring 2017 [Teaching Assistant]
- **ENGG2450:** Probability and Statistics for Engineers, Spring 2018 [Teaching Assistant]

## Mentoring

- **Luo, Ziyang**      **PhD at Hong Kong Baptist University**
- **Yang, Ruichao**      **PhD at Hong Kong Baptist University**
- **Lin, Hongzhan**      **PhD at Hong Kong Baptist University**
- **Niu, Shuai**      **PhD at Hong Kong Baptist University**
- **Yang, Zhiwei**      **PhD at Jilin University**
- **Wang, Bo**      **PhD at Jilin University**
- **Li, Jun**      **PhD at University of Electronic Science and Technology of China**
- **Peng, Likai**      **Research Assistant at Hong Kong Baptist University**