Jing Ren

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SUMMARY

Jing Ren has received the Ph.D. offer in Institute of Innovation, Science and Sustainability, Federation University Australia. Her PhD program is "Graph Learning for Efficient Anomaly Detection". She has published several papers in int'l journals and conferences, including IEEE Transactions on Emerging Topics in Computational Intelligence, IEEE Transactions on Computational Social Systems, ACM Transactions on Asian and Low-Resource Language Information Processing, Computer Science Review (Impact Factor: 7.707), SIGIR 2020, JCDL 2020/2022, and ICADL 2020. She received a number of academic awards, including, e.g., JCDL2022 The Student Travel Grant, **ACM/IEEE JCDL 2020 The Vannevar Bush Best Paper Honorable Mention**, Outstanding Student Award (*top 5%*), and Outstanding Graduate Award (*both undergraduate and postgraduate*). Her research interests include graph neural networks, network science, anomaly detection, and computational social science.

EDUCATION

Federation University Australia, Institute of Innovation, Science and Sustainability — Ballarat, Australia
***PhD** in Information Technology* — *Jul.2022 – Pre.*

Dalian University of Technology, School of Software (**ARWU 2020:** 201-300) — Dalian, China
***MSc** in Software Engineering (by Research)*
Average Score: 84.16/100 — *Sep. 2018 – Jun. 2020*

Tunghai University, School of Information Technology — Taichung, Taiwan
***Exchange Student** in Software Engineering* — *Feb. 2016 – Jul. 2016*

Huaqiao University, School of Computer Science and Technology — Xiamen, China
***BSc** in Software Engineering*
Average Score: 80/100 — *Sep. 2014 – Jul. 2018*

EMPLOYMENT

Research Fellow — *Jul. 2020 – Jul.2021*
Dalian University of Technology, School of Software — Dalian, China

RESEARCH INTERESTS

Graph Neural Networks; Network Science; Anomaly Detection; Computational Social Science

PUBLICATIONS

Journal

[1] Shuo Yu, **Jing Ren**, Shihao Li, Mehdi Naseriparsa, Feng Xia*. Graph Learning for Fake Review Detection, *Frontiers in Artificial Intelligence*, Vol. 5, 2022. DOI: 10.3389/frai.2022.922589

[2] Jiaying Liu, Feng Xia*, Xu Feng, **Jing Ren**, Huan Liu. Deep Graph Learning for Anomalous Citation Detection, *IEEE Transactions on Neural Networks and Learning Systems*, 2022. DOI: 10.1109/TNNLS.2022.3145092 (Impact Factor=8.793, Q1)

[3] **Jing Ren**, Feng Xia, Xiangtai Chen, Jiaying Liu, Mingliang Hou, Ahsan Shehzad, Nargiz Sultanova, and Xiangjie Kong. Matching Algorithms: Fundamentals, Applications and Challenges, *IEEE Transactions on Emerging Topics in Computational Intelligence*, 2021, DOI: 10.1109/TETCI.2021.3067655.

[4] Jiaying Liu, Hansong Nie, Shihao Li, Xiangtai Chen, Huazhu Cao, **Jing Ren**, Ivan Lee, and Feng Xia. Tracing the Pace of COVID-19 Research: Topic Modeling and Evolution, *Big Data Research*, Volume 25, July 2021. (Impact Factor=2.673, Q2)

[5] Feng Xia, Jiaying Liu, **Jing Ren**, Wei Wang, and Xiangjie Kong. Turing Number: How Far Are You to A. M. Turing Award? *ACM SIGWEB Newsletter*, 2020, DOI: 10.1145/3427478.3427483.

[6] Wei Wang, **Jing Ren**, Mubarak Alrashoud, Feng Xia, Mengyi Mao, Amr Tolba. Early-Stage Reciprocity in Sustainable Scientific Collaboration, *Journal of Informetrics*, Volume 14, Issue 3, August 2020. DOI: 10.1016/j.joi.2020.101041 (Impact Factor=4.611, Q1)

[7] Wei Wang, Zhiguo Gong, **Jing Ren**, Feng Xia, Zhihan Lv, Wei Wei. Venue Topic Model enhanced Joint Graph Modelling for Citation Recommendation in Scholarly Big Data, *ACM Transactions on Asian and Low-Resource Language Information Processing*, volume 20, pages 1-15, 2020 (Impact Factor=1.42)

[8] Lei Wang, **Jing Ren**, Bo Xu, Jianxin Li, Wei Luo, and Feng Xia. MODEL: Motif-based Deep Feature Learning for Link Prediction, *IEEE Transactions on Computational Social Systems*, 7(2): 503-516, 2020.

[9] Mingliang Hou, **Jing Ren**, Da Zhang, Xiangjie Kong, Dongyu Zhang and Feng Xia. Network Embedding: Taxonomies, Frameworks and Applications, *Computer Science Review*, 38: 100296, August 2020. DOI: 10.1016/j.cosrev.2020.100296 (Impact Factor=7.707, Q1)

[10] **Jing Ren**, Lei Wang, Kailai Wang, Shuo Yu, Mingliang Hou, Ivan Lee, Xiangjie Kong and Feng Xia. API: An Index for Quantifying a Scholar's Academic Potential, *IEEE Access*, Volume 7, December 2019, Pages 178675-178684. DOI: 10.1109/ACCESS.2019.2958649 (Impact Factor=3.745, Q1)

Conference

[1] **Jing Ren**, Yajie Shi, Adrian Shatte, Xiangjie Kong, Feng Xia. The significance and impact of winning an academic award: a study of early career academics, *Proceedings of the 22nd ACM/IEEE Joint Conference on Digital Libraries*, June 20-24, 2022, Cologne, Germany (Student Travel Grant)

[2] **Jing Ren**, Feng Xia, Yemeng Liu, Ivan Lee. Deep Video Anomaly Detection: Opportunities and Challenges, *International Conference on Data Mining (ICDM) Workshops*, December 7-10, 2021, Auckland, New Zealand

[3] Xiangtai Chen, Tao Tang, **Jing Ren**, Ivan Lee, Honglong Chen, Feng Xia. Heterogeneous Graph Learning for Explainable Recommendation over Academic Networks, *The 20th IEEE/WIC/ACM International Conference on Web Intelligence and Intelligent Agent Technology (WI-IAT)*, December 14-17, 2021, Melbourne, Australia

[4] Mingliang Hou, Jing Ren, Falih Febrinanto, Ahsan Shehzad, Feng Xia. Cross Network Representation Matching with Outliers, *International Conference on Data Mining (ICDM) Workshops,* December 7-10, 2021, Auckland, New Zealand

[5] **Jing Ren**, Ivan Lee, Lei Wang, Xiangtai Chen and Feng Xia. On the Correlation between Research Complexity and Academic Competitiveness, *The 22nd International Conference on Asia-Pacific Digital Libraries (ICADL)*, Online, November 30 - December 1, 2020 (CORE Rank A)

[6] Jin Xu, Shuo Yu, Ke Sun, **Jing Ren**, Ivan Lee, Shirui Pan and Feng Xia. Multivariate Relations Aggregation Learning in Social Networks, *ACM/IEEE Joint Conference on Digital Libraries (JCDL)*, Wuhan, Hubei, China, August 1-5, 2020 (The Vannevar Bush Best Paper Honorable Mention) (CORE Rank A*)

[7] Jiaying Liu, **Jing Ren**, Wenqing Zheng, Lianhua Chi, Ivan Lee and Feng Xia. Web of Scholars: A Scholar Knowledge Graph, *The 43rd International ACM SIGIR Conference on Research and Development in Information Retrieval (SIGIR)*, Xi an, Shanxi, China, July 25-30, 2020 (CORE Rank A*)

[8] Xiangjie Kong, Linyan Wen, **Jing Ren**, Mingliang Hou, Minghao Zhang, Kang Liu and Feng Xia. Many-to-Many Collaborator Recommendation Based on Matching Markets Theory, *The 4th IEEE Cyber Science and Technology Congress (CyberSciTech),* Fukuoka, Japan, August 5-8, 2019

[9] Shuo Yu, Yuanhu Liu, **Jing Ren**, Hayat Dino Bedru, Teshome Megersa Bekele, Liangtian Wan and Feng Xia. Mining Key Scholars via Collapsed Core and Truss, *The 4th IEEE Cyber Science and Technology Congress (CyberSciTech),* Fukuoka, Japan, August 5-8, 2019

Research Experience

Implicit Relationship Discovery and Extraction Based on Deep Graph Learning   *Sep. 2019 – Jul. 2021*

- Identified and analyzed the distribution of various network motifs in biological, citation, and transportation networks; leveraged network motifs to learn node embedding.
- Designed algorithms to evaluate the research complexity of universities and countries; analyzed the correlation between scientific research and economic development; visualized and analyzed experimental results.
- Constructed and trained parameters of a Graph Convolutional Network to discover implicit relationships among nodes in big networks; conducted comparative experiments to evaluate the performance of the proposed model.

Analysis and Mining of Academic Social Networks   *Sep. 2018 – Mar. 2020*

- Processed scholarly datasets including MAG, DBLP, and APS; devised algorithms to evaluate scholars' academic capacity; conducted experiments to verify the effectiveness of the algorithms.
- Developed a system (called Web of Scholars) demonstrating social relationships among scholars; built and visualized the knowledge graph embedded in the system.
- Established and analyzed various characteristics of collaboration networks of A.M Turing Award's winners; explored network science metrics to measure the difference between collaboration networks.
- Designed and implemented an algorithm to profile publication venues in terms of LDA (latent Dirichlet allocation) topic model; conducted comparative experiments to evaluate the performance of the proposed recommendation algorithm; visualized and analyzed experimental results.

PRESENTATION

- ✧ "Many-to-Many Collaborator Recommendation Based on Matching Markets Theory", *The 4th IEEE Cyber Science and*

Technology Congress (CyberSciTech), Fukuoka, Japan, August 5-8, 2019.
- ✧ "On the Correlation between Research Complexity and Academic Competitiveness", *The 22nd International Conference on Asia-Pacific Digital Libraries (ICADL)*, Online, November 30 - December 1, 2020. (CORE Rank A)
- ✧ "The Significance and Impact of Winning an Academic Award: A Study of Early Career Academics", *Proceedings of the 22nd ACM/IEEE Joint Conference on Digital Libraries (JCDL),* Germany and Online, June 20-24, 2022. (CORE Rank A)

HONORS

The Student Travel Grant, ACM/IEEE JCDL 2022	*Jun.* 2022
The Vannevar Bush Best Paper Honorable Mention, ACM/IEEE JCDL 2020	*Aug. 2020*
Outstanding Graduate of Dalian City, Dalian University of Technology	*Jun. 2020*
Outstanding Contribution Award, The Alpha Lab, Dalian University of Technology	*Jan. 2020*
Outstanding Student Scholarship, Dalian University of Technology	*2019-2020*
Outstanding Postgraduate of the University, Dalian University of Technology	*Apr. 2019*
Outstanding Contribution Award, The Alpha Lab, Dalian University of Technology	*Jan. 2019*
Outstanding Graduate of the University, Huaqiao University (***top 5%***)	*Jul. 2018*
Outstanding Student of the University, Huaqiao University (***top 5%***)	*Dec. 2016*
Outstanding Student Scholarship, Huaqiao University, multiple times	*2015-2017*

PROFESSIONAL SERVICES

Invited Journal Reviewer
- ACM Transactions on Knowledge Discovery from Data
- IEEE Transactions on Industrial Informatics
- IEEE Access
- Artificial Intelligence Review

Program Committee Member
- IAAA Workshop of IEEE ICDM 2021

LANGUAGES

Language: Chinese (native), English (fluent; **IELTS** in 2020: **7.0**)