

Yu Chen | Curriculum Vitae

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Education

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| Rensselaer Polytechnic Institute <i>Ph.D in Computer Science</i> GPA: 3.89/4.0 | Troy, NY, USA AUG. 2015 - AUG. 2020 |
| University of Michigan-Dearborn <i>Exchange student in Computer & Information Science</i> | Dearborn, MI, USA AUG. 2014 - DEC. 2014 |
| University of Electronic Science and Technology of China <i>B.Eng. in Telecommunications Engineering</i> GPA: 3.98/4.0 | Chengdu, China SEP. 2011 - JUL. 2015 |

Research & Work Experience

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| Research Scientist, Facebook | Menlo Park, CA, USA SEP. 2020 - PRESENT |
| Graduate Research Assistant, RPI Advisor: Dr. Mohammed J. Zaki | Troy, NY, USA MAY 2017 - JUL. 2020 |
| AI Research Intern, IBM Research Manager: Dr. Lazaros Polymenakos | Yorktown Heights, NY, USA MAY 2018 - AUG. 2018 |
| Graduate Teaching Assistant, RPI | Troy, NY, USA AUG. 2015 - MAY 2017 |

Research Highlights

His research interests lie at the intersection of Machine Learning (Deep Learning), Data Mining, and Natural Language Processing, with a particular emphasis on the fast-growing field of Graph Neural Networks and their applications in various domains. His thesis topic is on designing and developing novel deep learning approaches for question answering and generation from structured and unstructured data. His work has been published in top-ranked conferences including but not limited to NeurIPS, ICML, ICLR, AAAI, IJCAI, NAACL, KDD, ISWC, and AMIA. He was the recipient of the Best Student Paper Award of AAAI DLGMA'20. He is also a co-inventor of 4 filed US patents.

Projects

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| Personalized Search and Recommendation for Health Empowerment <i>Rensselaer Polytechnic Institute, Advisor: Dr. Mohammed J. Zaki</i> Designed and developed a novel knowledge-based Q&A system for personalized food search and recommendation. | Troy, NY, USA MAY 2017 - JUL. 2020 |
| Graph Learning for Graph Neural Networks <i>Rensselaer Polytechnic Institute, Mentor: Dr. Lingfei Wu</i> Designed and developed a novel iterative deep graph learning method for graph neural networks. | Troy, NY, USA JUN. 2019 - SEP. 2019 |
| Natural Question Generation <i>Rensselaer Polytechnic Institute, Mentor: Dr. Lingfei Wu</i> Designed and developed a reinforcement learning based graph-to-sequence model for natural question generation. | Troy, NY, USA MAR. 2019 - MAY 2019 |

Conversational Machine Comprehension

Rensselaer Polytechnic Institute, Mentor: Dr. [Lingfei Wu](#)

Troy, NY, USA

DEC. 2018 - FEB. 2019

Designed and developed a system for conversational machine comprehension via recurrent graph neural networks.

Knowledge Base Question Answering

Rensselaer Polytechnic Institute, Advisor: Dr. [Mohammed J. Zaki](#)

Troy, NY, USA

SEP. 2017 - MAY 2018

Designed and developed a novel bidirectional attentive memory network for question answering over knowledge graphs.

Text Analytics via Topic modeling and Text Representation

Rensselaer Polytechnic Institute, Advisor: Dr. [Mohammed J. Zaki](#)

Troy, NY, USA

AUG. 2016 - FEB. 2017

Designed and developed a novel autoencoder-based system for text analytics via competitive learning.

Honors & Awards

Best Student Paper Award of AAAI DLGMA 2020

AAAI DLGMA 2020

FEB. 2020

Student Travel Award of SIGKDD 2017

ACM SIGKDD

JUL. 2017

The First-Class People's Scholarship

The University of Electronic Science and Technology of China

2012 - 2013 & 2013 - 2014

National Scholarship

Ministry of Education of China, Top 1.6 %

2011 - 2012

Skills

Research: Machine Learning, Deep Learning, Natural Language Processing, Data Mining

Programming: PYTHON = C/C++ > MATLAB > R = JAVASCRIPT = PHP

Software: PyTorch, TensorFlow, Keras, Scikit-learn, Linux, MacOS, Database, Git

Publications

Preprints.....

1. **Yu Chen**, Ananya Subburathinam, Ching-Hua Chen and Mohammed J. Zaki, Personalized Question Answering over a Large-scale Food Knowledge Graph.
2. **Yu Chen**, Lingfei Wu and Mohammed J. Zaki, Toward Subgraph Guided Knowledge Graph Question Generation with Graph Neural Networks.
3. **Yu Chen**, Lingfei Wu and Mohammed J. Zaki, Iterative Deep Graph Learning for Graph Neural Networks: Better and Robust Node Embeddings.
4. Shangqing Liu, **Yu Chen**, Xiaofei Xie, Jing Kai Siow and Yang Liu, Automatic Code Summarization via Multi-dimensional Semantic Fusing in GNN.

Conference Publications.....

1. **Yu Chen**, Ching-Hua Chen and Mohammed J. Zaki, Combining User Preferences and Health Needs in Personalized Food Recommendation. In *Proceedings of the 2020 American Medical Informatics Association Virtual Annual Symposium (AMIA 2020)*, Nov. 14-18, 2020.
2. **Yu Chen**, Lingfei Wu and Mohammed J. Zaki, GraphFlow: Exploiting Conversation Flow with Graph Neural Networks for Conversational Machine Comprehension. In *Proceedings of the 29th International Joint Conference on Artificial Intelligence (IJCAI 2020)*, Yokohama, Japan, 2020. Acceptance rate=12.6% (592 out of 4717).
3. **Yu Chen**, Lingfei Wu and Mohammed J. Zaki, Reinforcement Learning Based Graph-to-Sequence Model for Natural Question Generation. In *Proceedings of the 8th International Conference on Learning Representations (ICLR 2020)*, Apr. 26-30, 2020.
4. **Yu Chen**, Lingfei Wu and Mohammed J. Zaki, Deep Iterative and Adaptive Learning for Graph Neural Networks. In *AAAI 2020 Workshop on Deep Learning on Graphs: Methodologies and Applications (AAAI*

DLGMA 2020), New York, NY, USA, Feb. 7-12, 2020. ([Best Student Paper Award](#)).

5. **Yu Chen**, Lingfei Wu and Mohammed J. Zaki. Natural Question Generation with Reinforcement Learning Based Graph-to-Sequence Model. In *NeurIPS 2019 workshop on Graph Representation Learning (NeurIPS GRL 2019)*, Vancouver, BC, Canada, Dec. 8-14, 2019.
6. Steven Haussmann, **Yu Chen**, Oshani Seneviratne, Nidhi Rastogi, James Codella, Ching-Hua Chen, Deborah McGuinness, Mohammed J. Zaki. FoodKG Enabled Q&A Application. In *Proceedings of the 18th International Semantic Web Conference (ISWC 2019)*, Auckland, New Zealand, Oct. 26-30, 2019.
7. Steven Haussmann, Oshani Seneviratne, **Yu Chen**, Yarden Ne'eman, James Codella, Ching-Hua Chen, Deborah L. McGuinness and Mohammed J. Zaki. FoodKG: A Semantics-Driven Knowledge Graph for Food Recommendation. In *Proceedings of the 18th International Semantic Web Conference (ISWC 2019)*, Auckland, New Zealand, Oct. 26-30, 2019.
8. **Yu Chen**, Lingfei Wu and Mohammed J. Zaki. GraphFlow: Exploiting Conversation Flow with Graph Neural Networks for Conversational Machine Comprehension. In *ICML 2019 Workshop on Learning and Reasoning with Graph-Structured Representations (ICML LRG 2019)*, Long Beach, CA, USA, Jun. 9-15, 2019.
9. **Yu Chen**, Lingfei Wu and Mohammed J. Zaki. Bidirectional Attentive Memory Networks for Question Answering over Knowledge Bases. In *Proceedings of the 2019 Annual Conference of the North American Chapter of the Association for Computational Linguistics (NAACL-HLT 2019)*, Minneapolis, MN, USA, Jun. 2-7, 2019. Long Oral Paper.
10. **Yu Chen**, Rhaad M. Rabbani, Aparna Gupta and Mohammed J. Zaki. Comparative Text Analytics via Topic Modeling in Banking. In *Proceedings of the 2017 IEEE Symposium Series on Computational Intelligence (IEEE SSCI 2017)*, Hawaii, USA, Nov. 27-Dec. 1, 2017.
11. **Yu Chen** and Mohammed J. Zaki. KATE: K-competitive Autoencoder for Text. In *Proceedings of the 23rd International Conference on Knowledge Discovery and Data Mining (ACM SIGKDD 2017)*, Halifax, NS, Canada, Aug. 13-17, 2017. Full Oral Paper. Acceptance rate=8.6% (64 out of 748).
12. **Yu Chen**, Hao Chen and Jie Shen. Fast Voxel-based Surface Propagation Method for Outlier Removal. In *Proceedings of the 13th International CAD Conference (CAD 2016)*, Vancouver, BC, Canada, Jun. 27-29, 2016.

Journal Publications.....

1. Hao Chen, **Yu Chen**, Xu Zhang, Baiyuan Li, Xiaoqiang Liu, Xuefei Shi and Jie Shen. A Fast Voxel-based Method for Outlier Removal in Laser Measurement. In *International Journal of Precision Engineering and Manufacturing (IJPEM)*, 2019.

Patents

1. Lingfei Wu, **Yu Chen**, Mohammed J. Zaki. Method and System for Subgraph Guided Knowledge Graph Question Generation. Filed, Jul. 2020.
2. Lingfei Wu, **Yu Chen**, Mohammed J. Zaki. Method and System for Iterative Deep Graph Learning for Graph Neural Networks. Filed, May 2020.
3. Lingfei Wu, **Yu Chen**, Mohammed J. Zaki. Method and System for Natural Question Generation via Reinforcement Learning Based Graph-to-Sequence Model. Filed, Jan. 2020.
4. Lingfei Wu, **Yu Chen**, Mohammed J. Zaki. Method and System for Conversational Machine Reading Comprehension via Graph Neural Networks. Filed, Aug. 2019.

Professional Services

Technical Program Committee: EACL 2021, DLG-KDD 2020, EMNLP 2020, ACL 2020, IJCAI 2020, AAAI DLGMA 2020

Journal Reviewer: IEEE Transactions on Knowledge and Data Engineering (TKDE), Data Mining and Knowledge Discovery (DAMI), International Journal of Intelligence Systems (IJIS), ACM Transactions on Knowledge Discovery from Data (TKDD), Journal of Computer Science and Technology (JCST), Artificial Intelligence Review (AIRE)