# Yu Chen | Curriculum Vitae

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## Education

**Rensselaer Polytechnic Institute** — **Troy, NY**
*Ph.D in Computer Science* — Aug. 2015 - Aug. 2020 (expected)
*GPA: 3.89/4.0*

**The University of Michigan-Dearborn** — **Dearborn, MI**
*Exchange student in Computer & Information Science* — Sep. 2014 - Dec. 2014

**The University of Electronic Science and Technology of China** — **Chengdu, China**
*B.Eng. in Telecommunications Engineering* — Sep. 2011 - Jul. 2015
*GPA: 3.98/4.0*

## Research & Work Experience

**Graduate Research Assistant, RPI** — **Troy, NY**
*Advisor: Dr. Mohammed J. Zaki* — May. 2017 - Present

**AI Research Intern, IBM Research** — **Yorktown Heights, NY**
*Manager: Dr. Lazaros Polymenakos* — May. 2018 - Aug. 2018

**Graduate Teaching Assistant, RPI** — **Troy, NY**
Aug. 2015 - May. 2017

## Research Interests

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.

## Projects

**Personalized Search and Recommendation for Health Empowerment** — **Troy, NY**
*Rensselaer Polytechnic Institute, Advisor: Dr. Mohammed J. Zaki* — May. 2017 - Present
Designed and developed a novel knowledge-based Q&A system for personalized food search and recommendation.

**Graph Learning for Graph Neural Networks** — **Troy, NY**
*Rensselaer Polytechnic Institute, Mentor: Dr. Lingfei Wu* — Jun. 2019 - Sep. 2019
Designed and developed a novel iterative deep graph learning method for graph neural networks.

**Natural Question Generation** — **Troy, NY**
*Rensselaer Polytechnic Institute, Mentor: Dr. Lingfei Wu* — Mar. 2019 - May. 2019
Designed and developed a reinforcement learning based graph-to-sequence model for natural question generation.

**Conversational Machine Comprehension** — **Troy, NY**
*Rensselaer Polytechnic Institute, Mentor: Dr. Lingfei Wu* — Dec. 2018 - Feb. 2019
Designed and developed a system for conversational machine comprehension via recurrent graph neural networks.

**Knowledge Base Question Answering** — **Troy, NY**
*Rensselaer Polytechnic Institute, Advisor: Dr. Mohammed J. Zaki* — 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** — **Troy, NY**
*Rensselaer Polytechnic Institute, Advisor: Dr. Mohammed J. Zaki* — 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, Linux, MacOS, Database, Git

## Publications

### Preprints

1. **Yu Chen**, Lingfei Wu and Mohammed J. Zaki, Iterative Deep Graph Learning for Graph Neural Networks. Under review.
2. **Yu Chen**, Lingfei Wu and Mohammed J. Zaki, GraphFlow: Exploiting Conversation Flow with Graph Neural Networks for Conversational Machine Comprehension. Under review.

### Conference Publications

1. **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**), Addis Ababa, Ethiopia, Apr 26-30, 2020.
2. **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, Feb 7-12, 2020. (Best student paper award).
3. **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.
4. 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.
5. 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.
6. **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, June 9-15, 2019.
7. **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, June 2-7, 2019. Long Oral Paper.
8. **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.
9. **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).
10. **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, June 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 Iterative Deep Graph Learning for Graph Neural Networks. To be filed.
2. 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.
3. Lingfei Wu, **Yu Chen**, Mohammed J. Zaki. Method and System for Conversational Machine Reading Comprehension via Graph Neural Networks. Filed, Aug 2019.