

Zhiyu Chen

CONTACT INFORMATION

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RESEARCH INTERESTS

Information retrieval, natural language processing, data mining, machine learning

EDUCATION

Lehigh University, Bethlehem, PA, USA **09/2015-Present**

Ph.D. student, Department of Computer Science & Engineering

- Advisor: Brian D. Davison
- Overall GPA: 3.97/4.0

Ecole Supérieure d'Ingénieurs Léonard de Vinci, Paris, France **09/2014-01/2015**

Exchange Program

- Advisor: Gael Chareyron
- Overall GPA: 15.75/20

Nanjing University of Aeronautics and Astronautics, Nanjing, China **09/2011-06/2015**

B.S., Department of Computer Science & Technology

- Advisor: Dechang Pi
- Overall GPA: 4.2/5.0 (ranking: 1/94)

PUBLICATIONS

Neural Ranking Models for Document Retrieval **2021**

M. Trabelsi, Z. Chen, J. Hefflin and B.D. Davison
Submitted

MGNETS: Multi-Graph Neural Networks for Table Search **2021**

Z. Chen, M. Trabelsi, J. Hefflin, D. Yin and B.D. Davison
Accepted at Proceedings of the 30th ACM International Conference on Information and Knowledge Management, Online, November, 2021 (CIKM 2021).

WTR: A Test Collection for Web Table Retrieval **2021**

Z. Chen, S. Zhang and B.D. Davison
In Proceedings of the 44rd International ACM SIGIR Conference on Research and Development in Information Retrieval, Online, July, 2021 (SIGIR 2021).

A Hybrid Deep Model for Learning to Rank Data Tables **2020**

M. Trabelsi, Z. Chen, J. Hefflin and B.D. Davison
In Proceedings of the 2020 IEEE International Conference on Big Data (BigData 2020), December, 2020

Relational Graph Embeddings for Table Retrieval **2020**

M. Trabelsi, Z. Chen*, J. Hefflin and B.D. Davison*
In the Seventh International Workshop on High Performance Big Graph Data Management, Analysis, and Mining (BigGraphs 2020), held with IEEE BigData 2020

Towards Knowledge Acquisition of Metadata on AI Progress **2020**

*Z. Chen**, *M. Trabelsi**, *J. Heflin* and *B.D. Davison*

In Proceedings of the ISWC 2020 Demos and Industry Tracks: From Novel Ideas to Industrial Practice, co-located with the 19th International Semantic Web Conference (ISWC 2020), November, 2020

Table Search Using a Deep Contextualized Language Model **2020**

Z. Chen, *M. Trabelsi*, *J. Heflin*, *Y. Xu* and *B.D. Davison*

In Proceedings of the 43rd International ACM SIGIR Conference on Research and Development in Information Retrieval (SIGIR 2020), Xi'An, China, July, 2020.

Pretrained Generalized Autoregressive Model with Adaptive Probabilistic Label Cluster for Extreme Multi-label Text Classification **2020**

H. Ye, *Z. Chen*, *D. Wang* and *B. D. Davison*

In Proceedings of the 37th International Conference on Machine Learning (ICML 2020), July, 2020.

Leveraging Schema Labels to Enhance Dataset Search **2020**

Z. Chen, *H. Jia*, *J. Heflin*, and *B.D. Davison*

In Proceedings of the 42nd European Conference on Information Retrieval (ECIR 2020), Lisbon, Portugal, April, 2020.

Recognizing Quantity Names for Tabular Data **2018**

Y. Yi, *Z. Chen*, *J. Heflin* and *B.D. Davison*

In Joint Proceedings of the First International Workshop on Professional Search (ProfS2018); the Second Workshop on Knowledge Graphs and Semantics for Text Retrieval, Analysis, and Understanding (KG4IR); and the International Workshop on Data Search (DATA:SEARCH'18), pages 68-73. Co-located with SIGIR 2018, Ann Arbor, Michigan, USA, July.

Generating Schema Labels through Dataset Content Analysis (Best paper award) **2018**

Z. Chen, *H. Jia*, *J. Heflin*, and *B.D. Davison*

In Companion Proceedings of The Web Conference (WWW '18), Presented at the International Workshop on Profiling and Searching Data on the Web (Profiles & Data:Search'18, Co-located with The Web Conference, Lyon, France, April.

INDUSTRY
EXPERIENCE

Amazon, Seattle, WA, US

Applied Scientist Intern

05/2021-09/2021

A research project about conversational question answering. Details to be updated in the future.

Zhuiyi Technology, Shenzhen, China

Machine Learning Intern

05/2019-09/2019

Represented the company to join a natural language understanding competition: <https://super.gluebenchmark.com/leaderboard>. I was in charge of WiC and WSC among all 8 tasks on Super-GLUE. I also contributed ideas to other 2 team members who were working on the rest tasks. Our submission ranked 3rd at the time of submission, including the human baseline ranked 1st.

Bloomberg, Princeton, New Jersey, USA

Data Science Intern

06/2016-08/2016

Developed a tool to analyze and visualize the log of Bloomberg Data License.

RESEARCH
PROJECTS

Domain-Agnostic Dataset Search Lehigh University, Bethlehem, PA, USA

Research Assistant

06/2016-present

The goal of this project is to develop a prototype dataset search engine incorporating new techniques for full-content indexing to enable searchers to find data across the web, regardless of domain. My contribution includes: crawled datasets from data portals; developed methods to augment dataset metadata (schema labels); developed new models to rank datasets; created a new benchmark for evaluation.

The PRAISys Project, Lehigh University, Bethlehem, PA, USA

Research Assistant

05/2018-08/2018

The PRAISys (Probabilistic Resilience Assessment of Interdependent Systems) platform performs post-event resilience analysis of communities by addressing stochastic interdependencies among infrastructure systems in a probabilistic way. I improved the platform by augmenting the simulator with sub-component analysis.

Discovery of Adverse Drug Reactions from Online Forums, Lehigh University, Bethlehem, PA, USA

Research Assistant

09/2015-06/2016

Proposed an algorithm that can automatically extract intra-sentence Drug-ADRs and inter-sentence Drug-ADRs from online medical forums.

TALKS

Deep Text Matching and Applications (slides)

2019

Z. Chen

Presentation of Depth Study & Graduate Research Seminar Series (GRSS) at the Lehigh University, Bethlehem, USA, May 2019.

Challenges and Progress in Dataset Search (slides)

2018

Z. Chen

Presentation at the Eighth BCS-IRSG Symposium on Future Directions in Information Access (FDIA 2018), co-located with the 8th International Conference on the Theory of Information Retrieval, Tianjin, China, September 2018.

PROFESSIONAL
ACTIVITIES

PC Member

WSDM 2022

Reviewer

TKDE 2021

External Reviewer

SIGIR 2021

Reviewer

CIKM 2020

External Reviewer

SIGIR 2020

External Reviewer

SDM 2019

Student Volunteer

SIGIR 2018

External Reviewer

BigData 2017-2020

External Reviewer

WWW 2017

TEACHING

Teaching Assistant

Fundamentals of Programming (CSE 2), Lehigh University, 2016 Fall and Spring 2017

HONORS AND
AWARDS

2021, ACM SIGIR Student Travel Grant
2021, Rossin Professional Development Program Award at Lehigh University
2020, ISWC Student Grant
2020, ACM SIGIR Student Travel Grant
2018, Best Paper Award of International Workshop on Profiles & Data:Search'18
2018, ACM SIGIR Student Travel Grant
2015, RCEAS Dean's Fellowship
2014, Chinese Government Scholarship from China Scholarship Council
2013, First Prize, National Mathematical Contest in Modeling (Jiangsu Division)
2012, Honorable Mention for Social Practice
2012, Second Prize, 11th Higher Mathematics Competition of Jiangsu Province
2011-2014, Student Scholarship
2011-2014, Merit Student