Denghui Zhang

Rutgers University, NJ, US

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Educations

Rutgers Business School, Rutgers University, New Jersey *Sep. 2018 - Jun. 2023*

- Ph.D. in Information Technology, at Rutgers Data Mining Group
- Advisor: Prof. Hui Xiong

Institute of Computing Technology, Chinese Academy of Sciences, Beijing *Sep. 2015 - Jun. 2018*

- M.S. in Computer Science, at CAS Key Laboratory of Network Data Science and Technology
- Advisor: Prof. Jun Xu, and Prof. Yuanzhuo Wang

University of Science and Technology Beijing, Beijing, China *Sep. 2011 - Jun. 2015*

- B.E. in Electronic Engineering, at School of Computer and Communication Engineering

Research Interest

General: Data Mining, Representation Learning, Natural Language Processing, Knowledge Graph
Applications: Talent Intelligence, E-commerce Analysis, Spatio-temporal Modeling

Publications

ICIS'2022 **Acqui-hiring or Acqui-quitting: Post-M&A Turnover Prediction via a Dual-fit GNN Model**
Denghui Zhang, Hao Zhong, Jingyuan Yang
International Conference on Information Systems, 2022. (Under review)

TKDE **Multi-Faceted Knowledge-Driven Pre-training for Product Representation Learning**
Denghui Zhang, Yanchi Liu, Zixuan Yuan, Yanjie Fu, Haifeng Chen, Hui Xiong
IEEE Transactions on Knowledge and Data Engineering, 2022. (Second-round, minor revision)

TKDE **Interpretable Event-Driven Financial Forecasting with Online Knowledge Distillation**
Zixuan Yuan, Hao Liu, Renjun Hu, **Denghui Zhang**, Peter Hafez, Xiaodong Lin, Hui Xiong
IEEE Transactions on Knowledge and Data Engineering, 2022. (Under review)

TKDE **LEVER: Online Adaptive Sequence Learning Framework for High-Frequency Trading**
Zixuan Yuan, Junming Liu, Haoyi Zhou, **Denghui Zhang**, Hao Liu, Nengjun Zhu, Hui Xiong
IEEE Transactions on Knowledge and Data Engineering, 2022. (Under review)

KDD'2022 **Towards Learning Disentangled Representations for Time Series**
Yuening Li, Zhengzhang Chen, Daochen Zha, Mengnan Du, Jingchao Ni, **Denghui Zhang**, Haifeng Chen, Xia Hu The 28th ACM SIGKDD Conference on Knowledge Discovery and Data Mining, 2022. (14.99% acceptance rate)

AAAI'21 **Learning to Walk with Dual Agents for Knowledge Graph Reasoning**
Denghui Zhang, Zixuan Yuan, Hao Liu, Xiaodong Lin, , Hui Xiong
The 36th AAAI Conference on Artificial Intelligence, 2021. (Long paper, 15% Acceptance rate)

KDD'2021 **Domain-oriented Language Modeling with Adaptive Hybrid Masking and Optimal Transport Alignment**
Denghui Zhang, Zixuan Yuan, Yanchi Liu, Hao Liu, Fuzhen Z, Hui Xiong, Haifeng Chen
The 27th ACM SIGKDD Conference on Knowledge Discovery and Data Mining, 2021.
(Research track, 15.4% acceptance rate)

Preprint **E-BERT: A Phrase and Product Knowledge Enhanced Language Model for E-commerce**
Denghui Zhang, Yanchi Liu, Fuzhen Zhuang, Hui Xiong
arXiv:2009.02835

AAAI'21 **Self-Supervised Prototype Representation Learning for Event-Based Corporate Profiling**
Zixuan Yuan, Hao Liu, Renjun Hu, **Denghui Zhang**, Hui Xiong
The 35th AAAI Conference on Artificial Intelligence, 2021. (Long paper, 21% acceptance rate)

ICDM'20 **T^2-Net: A Semi-supervised Deep Model for Turbulence Forecasting**
Denghui Zhang, Yanchi Liu, Wei Cheng, Bo Zong, Jingchao Ni, Zhengzhang Chen, Haifeng Chen, Hui Xiong
The 20th IEEE International Conference on Data Mining, 2020. (19.7% acceptance rate)

SIGIR'20 **Spatio-Temporal Dual Graph Attention Network for Query-POI Matching**
Zixuan Yuan, Hao Liu, Yanchi Liu, **Denghui Zhang**, Fei Yi, Nengju Zhu, Hui Xiong
The 43rd International ACM SIGIR Conference on Research and Development in Information Retrieval, 2020. (Long paper, 26% acceptance rate)

CIKM'19 **Job2Vec: Job Title Benchmarking with Collective Multi-View Representation Learning**
Denghui Zhang, Junming Liu, Hengshu Zhu, Yanchi Liu, Lichen W, Pengyang W, Hui Xiong
The 28th ACM International Conference on Information and Knowledge Management, 2019.
(Regular paper, 19.7% acceptance rate)

AAAI'18 **Path-Based Attention Neural Model for Fine-Grained Entity Typing**
Denghui Zhang, Manling Li, Pengshan Cai, Yantao Jia, Yuanzhuo Wang
The Thirty-Second AAAI Conference on Artificial Intelligence, 2018. (Abstract)

WI'17 **Efficient Parallel Translating Embedding For Knowledge Graphs**
Denghui Zhang, Manling Li, Yantao Jia, Yuanzhuo Wang, Xueqi Cheng
The IEEE/WIC/ACM International Conference on Web Intelligence, 2017. (Long paper)

IEEE TBD **Link Prediction in Knowledge Graphs: A Hierarchy-Constrained Approach**
Manling Li, **Denghui Zhang**, Yantao Jia, Yuanzhuo Wang, Xueqi Cheng
IEEE Transaction on Big Data Special Issue on Knowledge Graphs: Techniques and Applications, 2017.

US Patent **Semi-supervised Deep Model for Turbulence Forecasting**
Yanchi Liu, Jingchao Ni, Bo Zong, Haifeng Chen, Zhengzhang Chen, Wei Cheng, **Denghui Zhang**

US Patent **Multi-scale Multi-granularity Spatial-temporal Traffic Volume Prediction**
Yanchi Liu, Wei Cheng, Bo Zong, LuAn Tang, Haifeng Chen, **Denghui Zhang**

Honors and Awards

Selected awards

- **Dissertation Fellowship at Rutgers University**
- Freshman Scholarship at Chinese Academy of Sciences (CAS) (Top 10%)
- Excellent Student Awards at CAS (Top 15%)
- National Scholarship at University of Science and Technology Beijing (**Top 2%**)
- National Motivational Scholarship at USTB (Top5%)
- Excellent Student Awards at USTB (Top 5%)

Experiences

Amazon Science, Product Graph Team, Applied Scientist Intern *May-August 2021*

- Mix-supervised Pre-training for Variation-aware Entity Linkage: Proposed a mix-supervised pre-training framework and delivered a pre-trained e-commerce domain language model, which is not label-intensive and can be easily fine-tuned to detect both duplicate (i.e., exact match) and variational entities.

Data Science Department, NEC Laboratories America, Research Intern *May-August 2020*

- Deep contextualized product semantic learning: Proposed to adapt language model pre-training to the scenario of product matching, product search, etc., enhancing language modeling of product domain with product knowledge.

Data Science Department, NEC Laboratories America, Research Intern *May-August 2019*

- Spatiotemporal traffic volume prediction: Proposed Spatial-Temporal Multi-Scale Multi-Granularity Network (ST-MSGN) for site-level traffic volume prediction, by modeling the complex spatial and temporal dependencies and their interactions. Conduct experiments on real-world datasets (NYC-Bike and NYC-Taxi) to validate the effectiveness of the model.

Baidu Talent Intelligence Center, Research Intern *June-August 2018*

- Resume distribution: Developed resume recommender system for Baidu HR department, using NLP techniques to obtain the resume-job similarities and distribute resumes according to similarity scores and the headcount of different departments.
- Job title benchmarking: Developed a data-driven approach to match job titles with similar expertise levels across various companies.

Professional Services

Session Chair

- INFORMS Annual Meeting
  Session on "AI-driven Business Analytics: New Advances and Applications"

Program Committee Member

- AAAI Conference on Artificial Intelligence, 2022, 2021.
- ACM SIGKDD Conference on Knowledge Discovery and Data Mining, 2022.
- International Joint Conference on Artificial Intelligence (IJCAI), 2022.
- Association for Computational Linguistics (ACL) Rolling Review, 2022
- ACM International Conference on Web Search and Data Mining (WSDM), 2022

Reviewer

- International Conference on Information Systems (ICIS), 2022
- Journal of Electronic Commerce Research and Applications
- IEEE Transactions on Knowledge and Data Engineering (TKDE)
- International Conference on Information and Knowledge Management (CIKM), 2019, 2020
- Pacific Asia Conference on Information Systems (PACIS), 2022
- ACM Conference on Knowledge Discovery and Data Mining (SIGKDD), 2021

Teaching Experiences

Course Lecturer at Rutgers University

- 29:623:335:01, Data Warehousing & Data Mining (31 students), Spring 2022

Teaching Assistant at Rutgers University

- 29:623:335:01, Data Warehousing & Data Mining, Spring 2021
- 33:136:485:02, Time Series Model, 2020 Fall
- Information Security IT/CS, Fall 2021, Spring 2022

Skills

Language	Python, C/C++, Java, Scala, MySql, Shell
Tools	Keras, PyTorch, Tensorflow, Spark MLlib, Sklearn, Pandas