Curriculum Vitae of Tianxing Wu

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Birth year: 1990
Email: tianxingwu@seu.edu.cn

Research Interests

Knowledge Graph, Knowledge Representation and Reasoning, Data Mining, Semantic Web, Artificial Intelligence Applications

Education

March, 2015 – September, 2018
Ph.D. in Software Engineering
Southeast University, China (Advisor: Prof. Dr. Guilin Qi)

September, 2012 – November, 2014
Master of Engineering in Software Engineering
Southeast University, China (Advisor: Prof. Dr. Guilin Qi)

September, 2008 – June, 2012
Bachelor of Engineering in Computer Science and Technology (Software Class)
Nanjing Tech University, China (GPA Ranking: 2/109)

Professional Experience

January, 2020 – Now
Assistant Professor (Tenure-Track)
at School of Computer Science and Engineering, Southeast University, China

June, 2018 – December, 2019
Postdoc Researcher
Research Associate (June, 2018 – September, 2018)
Research Fellow (October, 2018 – December, 2019)
at the Research Group of "Data Management and Analytics", School of Computer Science and Engineering, Nanyang Technological University, Singapore
(work with Prof. Dr. Arijit Khan)

July, 2016 – September, 2016
Visiting Researcher
at the Research Group of "Web Science and Knowledge Management", Institute AIFB, Karlsruhe Institute of Technology, Germany (work with Dr. Lei Zhang)

Awards and Scholarships

2021   **ZhiShan Young Scholar of Southeast University，**
             The Doctor of Entrepreneurship and Innovation in Jiangsu Province

2020   **Excellent Ph.D. Degree Dissertation of Southeast University**
             42 out of 643 PhD degree dissertations (2018 – 2019) of Southeast University

2019   **Excellent Ph.D. Degree Dissertation of Jiangsu Computer Society**

2017   **China National Scholarship for PhD Students** (30,000 CNY)
             the 2nd time during my PhD

2016   **China National Scholarship for PhD Students** (30,000 CNY)
             3 out of about 70 CS PhD students in Southeast University each year

2016   **Excellent Master Degree Thesis of Jiangsu Province (China)**
             300 out of all the master degree theses (2014 – 2015) of 47 universities or institutes in
             Jiangsu Province (China)

2016   **Excellent Master Degree Thesis of Southeast University**
             52 out of 3,492 master degree theses (2014 – 2015) of Southeast University

2014   **Excellent Master Degree Graduate of Southeast University**
             10 out of about 150 CS master degree graduates in Southeast University (2014)

2010   **China National Scholarship for Undergraduate Students** (8,000 CNY)
             3 out of about 1000 CS and EE undergraduates in Nanjing Tech University each year

Funding

- **Southeast University Grant (ZhiShan Young Scholar Program)**
  PI, 300,000 CNY   January, 2022 – December, 2024
  Research on Technologies of Large-Scale Dynamic Knowledge Graph Representation Learning and Reasoning

- **Jiangsu Education Department Grant (The Project for the Doctor of Entrepreneurship and Innovation in Jiangsu Province, China)**
  PI, 150,000 CNY   October, 2021 – September, 2023
  Multilingual Knowledge Graph Construction from the Web & Cross-Language Applications

- **The Grant of Nanjing Human Resources and Social Security Bureau (2021 Nanjing Scientific and Technological Innovation Project for Overseas Students, Funding Category: B, China)**
  PI, 50,000 CNY   July, 2021 – June, 2022
  Multilingual Knowledge Graph Construction from the Web

- **The Grant of State Grid Jiangsu Electric Power Company Research Institute (China)**
  PI, 695,000 CNY   May, 2021 – October, 2022
  Knowledge Graph Construction on Relay Protection and its High-Level Applications

- **NSFC Young Scientists Fund Grant (China)**
  PI, 240,000 CNY   January, 2021 – December, 2023
  Research on Key Technologies of Bilingual Knowledge Graph Construction from Social Web Sites

- **The Grant of State Grid Jiangsu Electric Power Company Research Institute (China)**
  PI, 291,000 CNY   July, 2020 – January, 2021
  Knowledge Graph Construction and Intelligent Question Answering on Professional Competitions of Relay Protection

- **The Start-Up Grant of Southeast University (China)**
  PI, 100,000 CNY   July, 2020 – December, 2020
  Research on Key Technologies of Chinese-English Bilingual Knowledge Graph Construction

- **The Grant of Research Innovation Program for College Graduates in Jiangsu Province (China)**
  PI, 24,000 CNY   September, 2016 – September, 2017
  Research on Cross-Lingual Taxonomy Matching Based on Bilingual Topic Models

Publications (https://scholar.google.com/citations?user=VE7OlAkAAAAJ)

Book Chapter:

Tianxing Wu, Guilin Qi, Cheng Li. Introduction to Chinese Knowledge Graphs and their Applications. The New Silk Road Leads through the Arab Peninsula: Mastering Global Business and Innovation. Emerald Publishing Limited, 2019: 153-167.

Journal and Conference Papers:

2022

Tianxing Wu, Arijit Khan, Melvin Yong, Guilin Qi, Meng Wang. Efficiently embedding dynamic knowledge graphs. *Knowledge-Based Systems (**KBS**), 2022, 250: 109124.* (IF=8.139)

Xinnan Guo, Yongrui Chen, Guilin Qi, **Tianxing Wu**, Hao Xu. Improving Few-Shot Text-to-SQL with Meta Self-Training via Column Specificity. *In: Proceedings of the 31st International Joint Conference on Artificial Intelligence (**IJCAI**), 2022.*

Sheng Bi, Zafar Ali, Meng Wang, **Tianxing Wu**, Guilin Qi. Learning heterogeneous graph embedding for Chinese legal document similarity. *Knowledge-Based Systems (**KBS**), 2022, 250: 109046.* (IF=8.139)

Jingting Wang, **Tianxing Wu**, Jiatao Zhang. Incorporating Uncertainty of Entities and Relations into Few-Shot Uncertain Knowledge Graph Embedding. *In: Proceedings of the*

*7th China Conference on Knowledge Graph and Semantic Computing (**CCKS**), 2022.*

Chaoyu Gao, **Tianxing Wu**, Shenqi Jing, Yuxiang Wang. Medical Schema Matching using Knowledge Graph Embedding. *In: Proceedings of the 3rd Workshop on Extraction and Evaluation of Knowledge Entities from Scientific Documents (**EEKE**), 2022.*

2021
Jiatao Zhang, **Tianxing Wu**, Guilin Qi. *In: Proceedings of the 26th International Conference on Database Systems for Advanced Applications (**DASFAA**), Part I, 2021: 256-271.* (Full Paper)

Yuxiang Wang, Xiaoliang Xu, Qifan Hong, Jiahui Jin, **Tianxing Wu**. Top-k star queries on knowledge graphs through semantic-aware bounding match scores. *Knowledge-Based Systems (**KBS**), 2021, 213: 106655.* (IF=8.038)

Long Zhang, **Tianxing Wu**, Xiuqi Chen, Bingjie Lu, Chongning Na, Guilin Qi. Auto Insurance Knowledge Graph Construction and Its Application to Fraud Detection. *In: Proceedings of the 10th International Joint Conference on Knowledge Graphs (**IJCKG**), 2021: 64-70.* (Full Paper)

Luo Fei, **Tianxing Wu**, Arijit Khan. Online Updates of Knowledge Graph Embedding. *In: Proceedings of the 10th International Conference on Complex Networks and Their Applications (**COMPLEX NETWORKS**), Volume 2, 2021: 523-535.* (Full Paper)

Yike Wu, Yipeng Zhu, Jingchen Li, Chengye Zhang, Tianling Gong, Xiyuan Du, **Tianxing Wu**. Unmanned Aerial Vehicle Knowledge Graph Construction with SpERT. *In: Proceedings of the 6th China Conference on Knowledge Graph and Semantic Computing (**CCKS**), Evaluation Track, 2021: 151-159.* (Full Paper)

2020
Tianxing Wu, Haofen Wang, Cheng Li, Guilin Qi, Xing Niu, Meng Wang, Lin Li, Chaomin Shi. Knowledge graph construction from multiple online encyclopedias. *World Wide Web-Internet and Web Information Systems (**WWWJ**), 2020, 23(5): 2671-2698.* (IF=2.892)

Yuxiang Wang, Arijit Khan, **Tianxing Wu**, Jiahui Jin, Haijiang Yan. Semantic Guided and Response Times Bounded Top-k Similarity Search over Knowledge Graphs. *In: Proceedings of the 36th IEEE International Conference on Data Engineering (**ICDE**), 2020: 445-456.* (Full Paper)

2019
Tianxing Wu, Guilin Qi, Bin Luo, Lei Zhang, Haofen Wang. Language-Independent Type Inference of the Instances from Multilingual Wikipedia. *International Journal on Semantic Web and Information Systems (**IJSWIS**), 2019, 15(2): 22-46.* (IF=1.833)

Bing Liu, Huan Gao, Guilin Qi, Shangfu Duan, **Tianxing Wu**, Meng Wang. Adversarial Discriminative Denoising for Distant Supervision Relation Extraction. *In: Proceedings of*

the 24th International Conference on Database Systems for Advanced Applications (DASFAA), Part III, 2019: 282-286. (Short Paper)

Yongpan Sheng, Meng Wang, **Tianxing Wu**, Han Xu. Adaptive Local Learning Regularized Nonnegative Matrix Factorization for Data Clustering. *Applied Intelligence, 2019, 49(6): 2151-2168.* (IF=2.882)

Bing Liu, Guilin Qi, Lu Pan, Shangfu Duan, **Tianxing Wu**. Incorporating Human Knowledge in Neural Relation Extraction with Reinforcement Learning. *In: Proceedings of International Joint Conference on Neural Networks (IJCNN), 2019.* (Full Paper)

Yongpan Sheng, **Tianxing Wu**, Xin Wang: Incorporating Term Definitions for Taxonomic Relation Identification. *In: Proceedings of the 9th Joint International Semantic Technology Conference (JIST), 2019: 1-17.* (Full Paper)

Lei Zhang, **Tianxing Wu**, Liang Xu, Meng Wang, Guilin Qi, Harald Sack. Emerging Entity Discovery Using Web Sources. *In: Proceedings of the 4th China Conference on Knowledge Graph and Semantic Computing (CCKS), 2019: 175-184.*

Mengyi Zhang, **Tianxing Wu**, Qiu Ji, Guilin Qi. Mining Hypernym-Hyponym Relations from Social Tags via Tag Embedding. *In: Proceedings of the 5th International Conference on Artificial Intelligence and Security (ICAIS), 2019: 319-328.* (Short Paper)

2018

Tianxing Wu, Haofen Wang, Guilin Qi, Jiangang Zhu, Tong Ruan. On building and publishing Linked Open Schema from social Web sites. *Journal of Web Semantics (JWS), 2018, 51: 39-50.* (IF=2.429)

Tianxing Wu, Guilin Qi, Cheng Li, Meng Wang. A Survey of Techniques for Constructing Chinese Knowledge Graphs and Their Applications. *Sustainability, 2018, 10(9): 3245.* (IF=2.592)

Kang Xu, Guilin Qi, Junheng Huang, **Tianxing Wu**, Xuefeng Fu. Detecting bursts in sentiment-aware topics from social media. *Knowledge-Based Systems (KBS), 2018, 21(2): 443-461.* (IF=4.396)

Qiu Ji, Guilin Qi, Huan Gao, **Tianxing Wu**. Survey on Schema Induction from Knowledge Graphs. *In: Proceedings of the 3rd China Conference on Knowledge Graph and Semantic Computing (CCKS), 2018: 136-142 .* (Short Paper)

2017

Tianxing Wu, Lei Zhang, Guilin Qi, Xuan Cui, Kang Xu. Encoding Category Correlations into Bilingual Topic Modeling for Cross-Lingual Taxonomy Alignment. *In: Proceedings of the 16th International Semantic Web Conference (ISWC), Part I, 2017: 728-744.* (Full Paper)

Kang Xu, Guilin Qi, Junheng Huang, **Tianxing Wu**. Incorporating Wikipedia concepts

and categories as prior knowledge into topic models. *Intelligent Data Analysis (**IDA**), 2017, 21(2): 443-461.* (IF=0.772)

Tianxing Wu, Du Zhang, Lei Zhang, Guilin Qi. Cross-Lingual Taxonomy Alignment with Bilingual Knowledge Graph Embeddings. *In: Proceedings of the 7th Joint International Semantic Technology Conference (**JIST**), 2017: 251-258.* (Short Paper)

Tianxing Wu, Cong Gao, Guilin Qi, Lei Zhang, Chuanqi Dong, He Liu, Du Zhang. KG-Buddhism: The Chinese Knowledge Graph on Buddhism. *In: Proceedings of the 7th Joint International Semantic Technology Conference (**JIST**), 2017: 259-267.* (Short Paper)

Kang Xu, Feng Liu, **Tianxing Wu**, Sheng Bi, Guilin Qi. A Fast and Effective Framework for Lifelong Topic Model with Self-learning Knowledge. *In: Proceedings of the 16th China National Conference on Computational Linguistics (**CCL**), 2017: 147-158.* (Full Paper)

Kang Xu, Junheng Huang, **Tianxing Wu**. A Sentiment and Topic Model with Timeslice, User and Hashtag for Posts on Social Media. *In: Proceedings of the 2nd China Conference on Knowledge Graph and Semantic Computing (**CCKS**), 2017: 59-65.* (Short Paper)

2016
Tianxing Wu, Guilin Qi, Haofen Wang, Kang Xu, Xuan Cui. Cross-Lingual Taxonomy Alignment with Bilingual Biterm Topic Model. *In: Proceedings of the 30th AAAI Conference on Artificial Intelligence (**AAAI**), 2016: 287-293.* (Full Paper)

Kang Xu, Guilin Qi, Junheng Huang, **Tianxing Wu**. A Joint Model for Sentiment-Aware Topic Detection on Social Media. *In: Proceedings of 22nd European Conference on Artificial Intelligence (**ECAI**), 2016: 238-346.* (Full Paper)

Tianxing Wu, Shengjia Yan, Zhixin Piao, Liang Xu, Ruiming Wang, Guilin Qi. Entity Linking in Web Tables with Multiple Linked Knowledge Bases. *In: Proceedings of the 6th Joint International Semantic Technology Conference (**JIST**), 2016: 239-253.* (Full Paper)

2014
Haofen Wang, **Tianxing Wu**, Guilin Qi, Ruan Tong. On Publishing Chinese Linked Open Schema. *In: Proceedings of the 13th International Semantic Web Conference (**ISWC**), Part I, 2014: 293-308.* (Full Paper)

Tianxing Wu, Shaowei Ling, Guilin Qi, Haofen Wang. Mining Type Information from Chinese Online Encyclopedias. *In: Proceedings of the 4th Joint International Semantic Technology Conference (**JIST**), 2014: 213-229.* (Full Paper)

Tianxing Wu, Guilin Qi, Haofen Wang. Zhishi.schema Explorer: A Platform for Exploring Chinese Linked Open Schema. *In: Proceedings of the 7th Chinese Semantic*

*Web Symposium and 2nd Chinese Web Science Conference (**CSWS**), 2014: 174-181.* (Demo Paper)

Yanfang Ma, Huan Gao, **Tianxing Wu**, Guilin Qi. Learning Disjointness Axioms With Association Rule Mining and Its Application to Inconsistency Detection of Linked Data. *In: Proceedings of the 7th Chinese Semantic Web Symposium and 2nd Chinese Web Science Conference (**CSWS**), 2014: 29-41.* (Full Paper)

Patents in China
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[1] A Machine Learning Based Approach for Matching Ontologies in Literature Domain, Inventors: **Tianxing Wu**, Guilin Qi, Bin Luo, Bin Lu, Application Number: 201410799922.3. (granted)

[2] A Machine Learning Based Approach for Constructing Social Network Ontologies, Inventors: **Tianxing Wu**, Cheng Li, Guilin Qi，Application Number: 201610115254.7. (granted)

[3] A Table Entity Linking Approach Based on Multiple Knowledge Bases, Inventors: **Tianxing Wu**, Guilin Qi, Taiyun Liu, Shenjia Yan, Zhixin Piao, Liang Xu, Ruiming Wang, Application Number: 201610920031.8. (granted)

[4] An Instance Matching Approach based on Rules, Inventors: **Tianxing Wu**, Lin Li, Guilin Qi, Application Number: 202110320754.5. (under review)

[5] A Paired Entity Disambiguation Approach on Web Tables, Inventors: **Tianxing Wu**, Lin Li, Guilin Qi, Application Number: 202110720148.2. (under review)

[6] An Entity Alignment Approach based Multiple Entity Contexts, Inventors: **Tianxing Wu**, Lin Li, Guilin Qi, Application Number: 202110346496.8. (under review)

[7] A Root Cause Tracing Approach for Distributed System Faults based on Knowledge Graph Techniques, Inventors: **Tianxing Wu**, Anyuan Luo, Guilin Qi, Sudong Fang, Application Number: 202110722163.0. (under review)

[8] A Machine Learning Based Approach for Cross-Lingual Taxonomy Alignment, Inventors: Yishu Fang, Guilin Qi, **Tianxing Wu**, Bin Lu, Application Number: 201510105414.5. (granted)

[9] A Cross-Lingual Taxonomy Matching Method Based on Topic Model, Inventors: Xuan Cui, Guilin Qi, **Tianxing Wu**, Application Number: 201710441927.2. (granted)

[10] A Dynamic Knowledge Graph Updating Approach, Inventors: Guilin Qi, Cheng Li, Lin Li, **Tianxing Wu**, Application Number: 201810627957.7. (under review)

[11] A Dynamic Knowledge Graph Representation Learning Approach under Dynamic Scenarios, Inventors: Chen Li, **Tianxing Wu**, Guilin Qi, Application Number: 202010972901.2. (under review)

[12] A Semantic Matching Model for Knowledge Points Location, Inventors: Yike Wu, **Tianxing Wu**, Lin Li, Chaoyu Gao, Guilin Qi, Application Number: 202110319217.9. (under review)

Service Activities

Academic Organizations
CIPS Language and Knowledge Computing Committee Member
CCF YOCSEF Nanjing Academic Committee Member
JSAI Natural Language Processing Committee Member

Conferences
2022   **CCKS Resource Track Chair**
      Program Committee Member of AAAI, IJCAI, IJCKG, CCKS
2021   **CCKS Poster & Demo Chair**
      Program Committee Member of AAAI, IJCAI, IJCKG, CCKS, PIC
      External Reviewer of TheWebConf (WWW)
2020   **Program Committee Member** of IJCAI, ECAI, ISWC, PAKDD, JIST
      External Reviewer of SIGMOD, VLDB, TheWebConf (WWW), CIKM
2019   **Program Committee Member** of JIST
      External Reviewer of VLDB, TheWebConf (WWW), ISWC, DSAA
2018   **External Reviewer** of IJCAI, ICDM
2017   **External Reviewer** of AAAI, IJCAI
2016   **External Reviewer** of AAAI, IJCAI, WWW, ISWC, JIST
2015   **External Reviewer** of AAAI, WWW, ISWC, ESWC, JIST
2014   **External Reviewer** of ISWC, EKAW, CSWS

Journals
<u>Editorial Board Member</u> of International Journal on Semantic Web and Information Systems (IJSWIS), Data Intelligence (DI)

2022   **Reviewer** of Journal of Web Semantics (JWS), Knowledge-based Systems (KBS), Applied Intelligence (APIN), Engineering Applications of Artificial Intelligence (EAAI), International Journal on Semantic Web and Information Systems (IJSWIS), Aslib Journal of Information Management (AJIM), Scientometrics (SCIM), Data Intelligence (DI)
2021   **Reviewer** of Knowledge-based Systems (KBS), Applied Intelligence (APIN),

International Journal on Semantic Web and Information Systems (IJSWIS), Data Intelligence (DI)

2020 **Reviewer** of IEEE Transactions on Knowledge and Data Engineering (TKDE), ACM Transactions on Asian and Low-Resource Language Information Processing (TALLIP), Knowledge-based Systems (KBS), Future Generation Computer Systems (FGCS), Applied Intelligence (APIN), Data Intelligence (DI), Information

2019 **Reviewer** of Knowledge-based Systems (KBS), Concurrency and Computation: Practice and Experience (CCPE), International Journal of Cognitive Informatics and Natural Intelligence (IJCINI), Information
External Reviewer of Information Sciences (IS)

2018 **Reviewer** of Knowledge-based Systems (KBS), International Journal on Semantic Web and Information Systems (IJSWIS)
External Reviewer of Journal of Web Semantics (JWS)

2017 **Reviewer** of International Journal on Semantic Web and Information Systems (IJSWIS)

2016 **External Reviewer** of Journal of Web Semantics (JWS)

2015 **External Reviewer** of Journal of Web Semantics (JWS)

Workshops

2022 **Program Committee Member** of EEKE 2022, the 3rd Workshop on Extraction and Evaluation of Knowledge Entities from Scientific Documents (co-located with JCDL 2022)

2021 **Program Committee Member** of EEKE 2021, the 2nd Workshop on Extraction and Evaluation of Knowledge Entities from Scientific Documents (co-located with JCDL 2021)

2020 **Program Committee Member** of GRADES-NDA 2020, the 3rd Joint International Workshop on Graph Data Management Experiences & Systems and Network Data Analytics (co-located with SIGMOD 2020)

2019 **Program Committee Member** of GRADES-NDA 2019, the 2nd Joint International Workshop on Graph Data Management Experiences & Systems and Network Data Analytics (co-located with SIGMOD 2019)

2018 **Program Committee Member** of BigGraphs 2018, the 5th International Workshop on High Performance Big Graph Data Management, Analysis, and Mining (co-located with IEEE BigData 2018)

Current and Former Supervised Students

Master Students
2022

▫ Jingting Wang (Knowledge Graph Representation Learning) (Paper in CCKS 2022)
▫ Feiyue Wu (Medical Knowledge Services)

2021
▫ Yilin Chen (Rule Mining and Reasoning)
▫ Xudong Cao (Knowledge Graph Construction)
▫ Yipeng Zhu (Dialogue System)

2020
▫ Chaoyu Gao (Knowledge Graph Completion) (Paper in EEKE 2022)

Undergraduate Students
2018
▫ Minghao Wang (Infectious Disease Prediction) (Next Position: Master Student, The Hong Kong University of Science and Technology)

Competitions
2021
▫ The Third Prize of the 12th Competition of Chinese College Students Service Outsourcing Innovation and Entrepreneurship.
supervised students: Minghao Wang, Yike Wu, Jingyi Xu, Chaoyu Gao, Xinnan Guo

▫ Rank the Second in the CCKS 2021 Evaluation Task: Unmanned Aerial Vehicle Knowledge Graph Construction: Construction Phase;
  Rank the Third in the CCKS 2021 Evaluation Task: Unmanned Aerial Vehicle Knowledge Graph Construction: Application Phase.
supervised students: Yike Wu, Yipeng Zhu, Tianling, Gong, Chenye Zhang, Jingchen Li, Xiyuan Du

▫ 3 teams won the Second Prizes of the Future Cup Activists of Artificial Intelligence & Robotic Projects.
supervised students:
team1: Xiangtian Xue, Qianyi Zhu, Bin Zhu;
team2: Yilun Kong, Xinlong Yin, Xinjian Yin, Chenhao Li;
team3: Yike Wu, Yanglong He, Yintai Li, Xiyuan Du, Jingchen Li
  one team won the Third Prize of the Future Cup Activists of Artificial Intelligence & Robotic Projects.
supervised students: Yichen Liu, Jiteng Zhao, Xin Lin