

TONGNIAN WANG

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EDUCATION

The University of Texas at San Antonio

PH.D. IN INFORMATION TECHNOLOGY

2021-2025 (expected)

– GPA: 3.94

– Supervisors: Dr. Yuanxiong Guo and Dr. Kim-Kwang Raymond Choo

University of Florida

M.S. IN ELECTRICAL & COMPUTER ENGINEERING

2019-2021

– GPA: 3.85

Wuhan University of Science and Technology

B.ENG. IN ELECTRONIC & INFORMATION ENGINEERING

2015-2019

RESEARCH INTERESTS

HEALTHCARE IS, RESPONSIBLE AI, MACHINE LEARNING, BIOMEDICAL INFORMATICS

PUBLICATIONS

JOURNAL PUBLICATIONS

- [J1] Analyzing the Impact of Personalization on Fairness in Federated Learning for Healthcare.
Tongnian Wang, Kai Zhang, Jiannan Cai, Yanmin Gong, Kim-Kwang Raymond Choo, and Yuanxiong Guo
Journal of Healthcare Informatics Research (JHIR), 2024. (Impact Factor: 4.3)
- [J2] Applications of Federated Learning in Mobile Health: Scoping Review.
Tongnian Wang, Yan Du, Yanmin Gong, Kim-Kwang Raymond Choo, and Yuanxiong Guo
Journal of Medical Internet Research (JMIR), 2023. (Impact Factor: 7.4)

CONFERENCE PROCEEDINGS

- [P1] Enabling Privacy-Preserving Prediction for Length of Stay in ICU — A Multimodal Federated Learning-based Approach.
Tongnian Wang, Yuanxiong Guo, Kim-Kwang Raymond Choo
In Proceedings of the 31st European Conference on Information Systems, ECIS 2023.
- [P2] Analyzing the Impact of Personalization on Fairness in Federated Learning for Healthcare (Short).
Tongnian Wang, Kai Zhang, Jiannan Cai, Yanmin Gong, Kim-Kwang Raymond Choo, and Yuanxiong Guo
In Proceedings of the 11th IEEE International Conference on Healthcare Informatics, ICHI 2023.
- [P3] UTSA-NLP at RadSum23: Multi-modal Retrieval-Based Chest X-Ray Report Summarization.
Tongnian Wang, Xingmeng Zhao, Anthony Rios
In Proceedings of the 22nd Workshop on Biomedical Language Processing (BioNLP), ACL 2023.

- [P4] BabyStories: Can Reinforcement Learning Teach Baby Language Models to Write Better Stories?
Xingmeng Zhao, **Tongnian Wang**, Sheri Osborn, Anthony Rios
In Proceedings of the BabyLM Challenge at the 27th Conference on Computational Natural Language Learning, CoNLL 2023.

UNDER REVIEW & IN PREPARATION

- [R1] Improving Expert Radiology Report Summarization by Prompting Large Language Models with a Layperson Summary.
Xingmeng Zhao, **Tongnian Wang**, Anthony Rios
Under review: The 2024 Conference on Empirical Methods in Natural Language Processing (EMNLP).
- [R2] Online Client Scheduling and Resource Allocation for Efficient Federated Edge Learning.
Zhidong Gao, Zhenxiao Zhang, Yu Zhang, **Tongnian Wang**, Yanmin Gong, Yuanxiong Guo
Under review: IEEE Transactions on Wireless Communications.
- [R3] FairPFL: Mitigating Health Disparities with Fairness-Aware Personalization in Federated Learning.
Tongnian Wang, Yuanxiong Guo, Kim-Kwang Raymond Choo, Yanmin Gong
Soon to be submitted to: Decision Support Systems (DSS).
- [R4] Personalized Blood Glucose Level Predictions and Dysglycemia Interventions.
Tongnian Wang, Yuanxiong Guo, Kim-Kwang Raymond Choo, Yanmin Gong, Yan Du
Work in progress. Target at: Information Systems Research (ISR).
- [R5] Federated Learning for Enhancing Large Language Models in Personalized Healthcare.
Early-stage work in progress.

PRESENTATIONS & TALKS

“Mitigating Health Disparities with Fairness-Aware Personalization in Federated Learning”

– AMCIS 2024, Salt Lake City, UT 2024

“Analyzing the Impact of Personalization on Fairness in Federated Learning for Healthcare”

– IEEE International Conference on Healthcare Informatics (ICHI), Houston, TX 2023

“Enabling Privacy-Preserving Prediction for Length of Stay in ICU — A Multimodal Federated-Learning-based Approach”

– The European Conference on Information Systems (ECIS), Kristiansand, Norway 2023

– 2023 INFORMS Annual Meeting, Phoenix, AZ 2023

– SURF Conference, San Antonio, TX 2023

“UTSA-NLP at RadSum23: Multi-modal Retrieval-Based Chest X-Ray Report Summarization”

– Annual Meeting of the Association for Computational Linguistics (ACL), Toronto, Canada 2023

– Los Datos Conference, San Antonio, TX 2023

TEACHING EXPERIENCES

Instructor, **IS 2053 Programming Languages I with Scripting**, UTSA Alvarez College of Business
– Spring 2024, 3.81/5.00 (Class size: 34, in-person)
– Spring 2025, Scheduled to teach (in-person)

Instructor, **IS 1413 Excel for Business Information Systems**, UTSA Alvarez College of Business
– Fall 2024, Scheduled to teach (online)

AWARDS & HONORS

2024 **Ph.D. Student of the Year Award (\$1000)**, UTSA Alvarez College of Business
2023, 2024 **Ph.D. Excellence Fund Awards (\$1500)**, UTSA Alvarez College of Business
2023, 2024 **Graduate School Professional Development Awards (\$750)**, UTSA
2019-2021 **Achievement Award Scholarship (\$1500)**, UF Herbert Wertheim College of Engineering
2019 **Outstanding Undergraduate Student Award**, WUST, China
2016-2018 **Top Grade Scholarship**, WUST, China

PROFESSIONAL SERVICES & ACTIVITIES

REVIEWER

2023-2024 IEEE International Conference on Distributed Computing Systems (ICDCS)
ACM Transactions on Knowledge Discovery from Data
Journal of Medical Internet Research (JMIR)
JMIR Journals: Public Health and Surveillance, Medical Informatics, Mental Health,
Formative Research, AI
Operations Research for Health Care

MEMBERSHIP

2023-now Association for Information Systems (AIS), INFORMS, IEEE

MENTORING

2023 Fall Tianyuan Zheng, PhD Student, UTSA Carlos Alvarez College of Business

SKILLS & MISCELLANY

Computer Languages: Python, R, Java, Git, LaTeX.
Databases: MySQL, PostgreSQL.
Data Science: Pandas, SciPy, Seaborn, Matplotlib.
Machine Learning: Pytorch, TensorFlow, Keras, Scikit-learn.
Natural Language Processing: NLTK, Hugging Face Transformers.
Systems/Hardware: Ubuntu, GPU (Nvidia), CUDA.
Hobbies: Tennis, Pickleball, Hiking, Road trip, Piano.

REFERENCES

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Kim-Kwang Raymond Choo
Professor
(210) 458-7876
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Charles Zhechao Liu
Interim Department Chair, Professor
(210) 458-6308
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