

# TONGNIAN WANG

One UTSA Circle, San Antonio, Texas 78249

☎ (+1) 830-359-8537 | ✉ tongnian.wang@utsa.edu | 🏠 <https://tongnianw.github.io>

## EDUCATION

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### The University of Texas at San Antonio

PH.D. IN INFORMATION TECHNOLOGY

2021-present

– GPA: 3.92

– Supervisor: 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

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Machine Learning, AI Ethics, Biomedical Informatics

## PUBLICATIONS

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### JOURNAL PUBLICATIONS

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; H5-index: 146)

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

*Major revision: Journal of Healthcare Informatics Research (JHIR)*, 2023. (In a final round review)

(Impact Factor: 4.3)

### CONFERENCE PROCEEDINGS

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.*

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

*In Proceedings of the Workshop on Ethics and Bias of Artificial Intelligence in Clinical Applications, ICHI 2023.*

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.*

## UNDER REVIEW AND IN PREPARATION

FairPFL: Personalized Federated Learning with Fairness Guarantee.  
**Tongnian Wang**, Yuanxiong Guo, Kim-Kwang Raymond Choo, Yanmin Gong  
*Under Review: The 38th Annual AAAI Conference on Artificial Intelligence, AAAI 2024.*

## PRESENTATIONS AND TALKS

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“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”

- 2023 Annual Meeting of the Association for Computational Linguistics (ACL), Toronto, Canada 2023
- Los Datos Conference, San Antonio, TX 2023

## TEACHING EXPERIENCE

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Spring 2024 **IS 2053 Programming Languages I with Scripting**, Instructor

- Class size: x
- Overall Rating of Instructor Evaluation: x/5.0
- Overall Rating of Course Evaluation: x/5.0

## AWARDS & HONORS

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- 2023 **BioNLP Shared Task 1B, 2nd Place**, ACL 2023
- Ph.D. Excellence Fund Awards**, UTSA Carlos Alvarez College of Business
- Graduate School Professional Development Awards**, UTSA
- 2020 **Achievement Award Scholarship**, UF Herbert Wertheim College of Engineering
- 2019 **Achievement Award Scholarship**, UF Herbert Wertheim College of Engineering

## PROFESSIONAL SERVICES & ACTIVITIES

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### REVIEWER

- 2023 ACM Transactions on Knowledge Discovery from Data
- 2023 Operations Research for Health Care
- 2023 JMIR Formative Research

### MEMBERSHIP

- 2023- Association for Information Systems (AIS)
- INFORMS

## MENTORING

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09/2023 - present

**Tianyuan Zheng**, PhD Student, UTSA

*Project: Explore fairness in federated learning.*

## TECHNICAL SKILLS

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**Computer Languages:** Python, R, Java, Git, LaTeX.

**Databases:** MySQL, PostgreSQL.

**Machine Learning:** Pytorch/TensorFlow, NLP.

**Data Science:** Pandas, Scikit-learn, Scipy, Matplotlib.

**Systems/Hardware:** Ubuntu, GPU (Nvidia), CUDA.

## REFERENCES

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**Yuanxiong Guo**

Associate Professor

(210) 458-8028

yuanxiong.guo@utsa.edu

**Kim-Kwang Raymond Choo**

Professor & Cloud Technology Endowed Professorship

(210) 458-7876

Raymond.Cho@utsa.edu