

Ling Tong

University of Wisconsin Milwaukee ([BioDLP Lab](#)) ([Ling's Website](#))
Department of Health Informatics & Administration, College of Health Sciences
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SUMMARY I am well-versed in medical informatics, artificial intelligence, applied statistics, and data science in medicine. I'm an analytical problem solver who is always looking for new ways to improve systems. I enjoy logical reasoning and solving complex problems. I'm a seasoned educator and researcher. I take part in professional conferences and research activities on a regular basis. I believe that students' desire of learning are the most important factors in their success. Also, I enjoy connecting students to their minds in order to transform their lives. I'm also a musician and an animal enthusiast.

ACADEMIC BACKGROUND *Ph.D. Biomedical and Health Informatics* 2022
[University of Wisconsin Milwaukee](#), Milwaukee, WI

- Research in Health Informatics under direction of [Jake Luo](#).
- Dissertation: Transforming Electronic Health Records for Machine Learning Diagnostic Model

B.S. Computer Science 2017
[University of South China](#), Hunan Province, P.R. China

- Thesis: Classifying Weibo Tweets for Tracking Influenza

RESEARCH EXPERIENCE *Research Assistant* 2017 - Present
[University of Wisconsin Milwaukee](#), [BioDLP Lab](#), Milwaukee, WI

- Conduct exploratory and predictive analysis on health informatic topics.
- Machine Learning, Deep Learning, Data Mining, Language Processing, and Knowledge representation.
- Create statistical and computer-based methodologies for translational research.
- Identify social and diagnostic gaps in populations using Electronic Health Records.
- Collaborate with Medical College of Wisconsin clinicians to identify social determinants of clinical conditions.
- Deliver presentations, talks, and workshops on a variety of clinical and computer science topics at conferences.

Research Assistant 2015 - 2017
University of South China, PI: [Lingyun Luo](#), Hunan, P.R. China

- Research Topic: Quality Improvement of Biomedical Terminologies
- We created methodologies for detecting inconsistencies in large biomedical ontologies.
- Over 3000 misalignments, imbalances, and missing concepts are detected, identified, and corrected.
- **Publication:** Evaluating the granularity balance of hierarchical relationships within large biomedical terminologies towards quality improvement on [Journal of biomedical informatics](#)

TEACHING EXPERIENCE

Instructor 2019 - 2022
[Computational Tools for Healthcare Professionals](#)

- This lecture focuses on healthcare introduction of computational tools for information management.
- A undergraduate course focus on system architecture, process, and ethical concepts.
- Incorporates training in Microsoft Excel application software.
- We adopted a hybrid teaching in a mix of online and in-person format since 2020.

Teaching Assistant 2018
[Health Big Data Processing Platforms](#). Instructor: [Jake Luo](#)

- Study of big data processing techniques in healthcare.
- Data analysis platform of Apache Spark.
- Responsibility: Grading Homework, in-class programming help, providing email support.

PUBLICATIONS *Journal Articles*

- Luo, J., **Tong, L.**, Crotty, B. H., Somai, M., Taylor, B., Osinski, K., & George, B. (2021). Telemedicine Adoption during the COVID-19 Pandemic: Gaps and Inequalities. *Applied Clinical Informatics*, 12(04), 836-844.
- Luo, L., **Tong, L.**, Zhou, X., Mejino Jr, J. L., & Liu, Y. (2017). Evaluating the granularity balance of hierarchical relationships within large biomedical terminologies towards quality improvement. *Journal of biomedical informatics*, 75, 129-137
- Anisuzzaman, D. M., Barzekar, H., **Tong, L.**, Luo, J., & Yu, Z. (2021). A deep learning study on osteosarcoma detection from

histological images. *Biomedical Signal Processing and Control*, 69, 102931

- Thomas, A., Flanary, V., Friedland, D. R., Adams, J. A., **Tong, L.**, Osinski, K., Luo, J. (2021). The impact of social determinants of health and clinical comorbidities on post-tympanotomy tube otorrhea. *International Journal of Pediatric Otorhinolaryngology*, 110986.
- Shane W. White, Jonathan M. Bock, Joel H. Blumin, David R. Friedland, Jazzmyne A. Adams, **Ling Tong**, Kristen Osinski, Jake Luo. (2021). Analysis of socioeconomic factors in laryngology clinic utilization for treatment of dysphonia, *Laryngoscope Investigative Otolaryngology*
- Poetker, D. M., Friedland, D. R., Adams, J. A., **Tong, L.**, Osinski, K., & Luo, J. (2021). Socioeconomic Determinants of Tertiary Rhinology Care Utilization. *OTO open*, 5(2), 2473974X211009830.
- Harvey, E., Stark, K., Friedland, D. R., Adams, J. A., Harris, M. S., **Tong, L.**, & Luo, J. Impact of Demographics and Clinical Features on Initial Treatment Pathway for Vestibular Schwannoma. *Otology and Neurotology*, 10-1097.
- M, Patel., J, Bock., J, Blumin., D, Friedland., A, Jazzmyne., **Tong, L.**, K, Osinski., J, Luo, Demographic Differences in the Treatment of Unilateral Vocal Fold Paralysis, *Laryngoscope Investigative Otolaryngology*, 2022.

Conferences

- **Tong, L.**, Luo, J., Cisler, R., & Cantor, M. (2019, July). Machine learning-based modeling of big clinical trials data for adverse outcome prediction: A case study of death events. In 2019 IEEE 43rd Annual Computer Software and Applications Conference (COMPSAC) (Vol. 2, pp. 269-274). IEEE.
- **Tong, L.**, Luo, J., Adams, J., Osinski, K., Liu, X., & Friedland, D. (2022, June). A Clustering-Aided Approach for Diagnosis Prediction: A Case Study of Elderly Fall. In 2022 IEEE 46th Annual Computers, Software, and Applications Conference (COMPSAC) (pp. 337-342). IEEE.
- Hernandez, L., **Tong, L.**, Cofino, J., Johannessen, J. O., Guda, N. M., Muddana, V., & Luo, J. (2020). Tu1058 Association Between Attending Endoscopists' experience And Complication Rates For All Endoscopic Procedures: A 10-Year Longitudinal Study. *Gastrointestinal Endoscopy*, 91(6), Ab525.
- **Tong, L.**, Hernandez, L. V., & Luo, J. (2020). 41 Predicting Gastrointestinal (Gi) Hemorrhage Using A Machine Learning Ap-

proach: Risk Factors And Predictive Analysis In Clinical Studies. Gastroenterology, 158(6), S-16.

- **Ling Tong**, Lyndon V. Hernandez, Julia Cofino, Jack O. Johannessen, Nalini M. Guda, Jake Luo, Tu1981 Association Modeling Between Patients' Age And Complication Rate For Endoscopic Procedures, Gastroenterology, 2020.

In review & In revision

- **Ling Tong**, Jake Luo, Jazzmyne Adams, Kristen Osinski, Xiaoyu Liu, David Friedland, Interpretable Machine Learning Text Classification for CT reports, A Case Study of Temporal Bone Fracture. Computer Methods and Programs in Biomedicine Update.
- Xiaoyu Liu, Hiba Abd, **Ling Tong**, Visualizing the Interpretation of a Criterion-Driven System that Automatically Evaluates the Quality of Health News: an Exploratory Study of Two Approaches. JMIR.
- **Ling Tong**, Masoud Khani, Jake Luo, Multi-class Image Classification of Diabetic Retinopathy Using Neural Networks. AI in Aging and Age-related Diseases Conference, 2022.
- Disparities in Telemedicine Adoption: Patient Characteristics and Remote Oncology Care During the COVID-19 Pandemic. IPEM translation Journal. 2022.
- Obesity, a Risk Factor of COVID-19 Severity: Evaluation of Mortality and Adverse Outcomes Among Diagnosed Patients. Clinical Obesity Journal. 2022.

INVITED PRESENTATIONS

- **Ling Tong**, Jake Luo, Jazzmyne adams, Kristen Osinski, Xiaoyu Liu, David Friedland, A Clustering-Aided Approach for Diagnosis Prediction: A Case Study of Elderly Fall. 2022 IEEE 46th Annual Computers, Software, and Applications Conferences.
- **Ling Tong**, Predicting the Clinical Outcomes from Clinical Trial Data using Machine Learning, presenting at 2019 Health Research Symposium at University of Wisconsin Milwaukee.
- **Ling Tong**, Jake Luo, Ron Cisler, Michael N. Cantor, Machine Learning-based Prediction of Death Events in Clinical Studies Using Big Clinical Trial Data, In 2019 IEEE 43rd Annual Computer Software and Applications Conference.
- **Ling Tong**, Jake Luo, From Phone to Medical Database: An Automatic Document Processing System for Clinical Laboratory Test, Presenting at 2019 Research Poster Competition, University of Wisconsin Milwaukee.

- Neil K. Osafo, BS; David R. Friedland, MD, PhD; Michael S. Harris, MD; Jazzmyne Adams, MPH; Chasity Davis; **Ling Tong**; Jake Luo, PhD, Standardization of Outcome Measures for Intratympanic Steroid Treatment for Idiopathic Sudden Sensorineural Hearing Loss, Combined Otolaryngology Specialties Meeting, Dallas, TX,
- Erin Harvey, MD; Katarina Stark, BS; David R. Friedland, MD, PhD; Jazzmyne A. Adams, Michael S. Harris, MD, **Ling Tong**, Jake Luo PhD, Impact of Demographics and Clinical Features on Initial Treatment Decision Making in Vestibular Schwannoma, 57th Annual Ans Spring Meeting, Dallas, TX,
- **Ling Tong**, Jake Luo, Ron Cisler, Michael N. Cantor, Machine Learning-based Prediction of Death Events in Clinical Studies Using Big Clinical Trial Data, 2018 Health Research Symposium University of Wisconsin Milwaukee.

PROFESSIONAL ACTIVITIES *Scholarly Reviews*

2019 - 2022

- Applied Clinical Informatics
- American Medical Informatics Association, 2022 Symposium
- Biomedical Signal Processing and Control
- Computers in Biology and Medicine
- Health Informatics Journal
- IEEE Journal of Biomedical and Health Informatics
- Journal of Medical Internet Research (JMIR)
- JMIR Public Health and Surveillance

Professional Memberships

2019 - 2022

- American Medical Informatics Association (AMIA)
- American Heart Association, Basic Life Support Provider
- Google Professional Data analytics
- IEEE Computer Society

AWARDS AND FELLOWSHIP

Chancellor's Graduate Student Awards

2017 - 2019

- \$16,000, Awarded by University of Wisconsin Milwaukee

Undergraduate Student Research and Innovative Project 2016 - 2017

- CN ¥10,000, Awarded by University of South China

LANGUAGES

- English: Full Professional Proficiency.
- Chinese: Native Proficiency.

REFERENCES

Jake Luo, PhD

- Associate Professor, Director of Health Care Informatics
- University of Wisconsin Milwaukee
- jakeluo@uwm.edu

Timothy Haas, PhD

- Associate Professor in Business Statistics, Lubar College of Business
- University of Wisconsin Milwaukee
- haas@uwm.edu

Susan Mcroy, PhD

- Professor, College of Engineering and Applied Science
- University of Wisconsin Milwaukee
- mcroy@uwm.edu

Steve Castelaz, MBA

- Adjunct professor, lecturer, College of Health Sciences
- University of Wisconsin Milwaukee
- castelaz@uwm.edu

Lingyun Luo, PhD

- Associate professor in Computer Science
- University of South China
- luoly@usc.edu.cn