Ling Tong

University of Wisconsin Milwaukee (BioDLP Lab) (Ling's Website)
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SUMMARY

Seasoned expert in computer science and technology. Has gained extensive knowledge of Medical Informatics, Artificial Intelligence, Statistics, and Data Science. An analytical problem-solver, eager to improve systems with innovative ideas. Enjoy logical reasoning and complex problemsolving. Excellent teaching and research records. Actively participating in professional conferences and research activities. Undergraduate course syllabus developer. Believe in students' interests are biggest factors of success. Actively connect to students to their mind to transform lives. Love music and animals.

ACADEMIC BACKGROUND

Ph.D. Biomedical and Health Informatics 2022
University of Wisconsin Milwaukee, Milwaukee, WI

- Ph.D. research in Health Informatics under direction of prof. 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 explorative and predictive analysis on various topics of health informatics.
- Research topics on (1) Machine Learning and Deep Learning, (2) Data Mining, (3) Language Processing, (4) Knowledge representation and modelling
- Develop statistical and computer science-based methodologies for translational studies.
- Discover social and diagnostic gaps from populations from Electronic Health Records
- Collaborate with clinicians of Medical College of Wisconsin, identify social determinants of clinical conditions.

- Give presentations, talks and workshops on various topics in clinical and computer science conferences.

Research Assistant 2015 - 2017
University of South China, Lingyun Luo's lab, Hengyang Hunan, P.R. China

- Research Topic: Quality Improvement of Biomedical Terminologies
- We developed a methodologies to identify inbalances of biomedical Terminologies in Large ontologies
- Over 3000 imbalances, missing concepts and misalignments 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, Computational Tools for Healthcare Professionals 2019 - 2022

- 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, Health Big Data Platforms, Instructor: Jake Luo 2018

- 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.
- 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

- 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
- 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.

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 Lectures (selection)

- **Ling Tong**, Jake Luo, Jazzmyne adams, Kristen Osinski, Xiaoyu Liu, David Friedland, A ClusteringAided Approach for Diagnosis Prediction: A Case Study of Elderly Fall. (2022) IEEE 46th Annual Computers, Software, and Applications Conferences COMPSAC.
- **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 (COMPSAC)
- **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 (podium), Combined Otolaryngology Specialties Meeting (COSM), Dallas, TX, 04/27/2022 - 05/01/2022
- 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, 04/29/2022 - 05/01/2022
- **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

- Journal Reviewer for IEEE Journal of Biomedical and Health Informatics. 2022.
- Journal Reviewer for Health Informatics Journal. 2022
- Journal Reviewer for Computers in Biology and Medicine Journal. 2022
- Journal Reviewer for Biomedical Signal Processing and Control. 2021 - 2022
- Journal Reviewer for Journal of Medical Internet Research(JMIR), 2022.
- Journal Reviewer for Applied Clinical Informatics. 2021 - 2022
- Conference Reviwer for AMIA 2022 Annual Symposium. 2022
- Journal Reviewer for JMIR Public Health and Surveillance. 2021
- American Heart Association, Basic Life Support Provider. 2022.
- Google, Professional Data analytics. 2019 - present.
- Members of Member of various professional societies: American Medical Informatics Association and IEEE. 2017 - present

AWARDS AND FELLOWSHIP

- (2017-2019), $16,000, Chancellor's Graduate Student Awards by University of Wisconsin Milwaukee.
- (2016-2017), $10,000. PI, undergraduate student research and innovative experiment Project

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 in Computer Science, 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