Ting Xiao, Ph.D.

Discovery Park E296C, 3940 Elm Street, Denton, TX 76201 · (940) 369-5212 · <u>Ting.Xiao@unt.edu</u> Director, <u>Deep Sensor Information eXtraction (SIX) Lab</u>

RESEARCH INTERESTS

- Machine Learning / Deep Learning
- Vector Embeddings for AI Applications
- Multimodal Large Language Models
- Clinical and Biomedical Applications of AI
- High Energy Particle Physics Data Analysis

PROFESSIONAL EXPERIENCE

University of North Texas

• Assistant Professor, The Anuradha and Vikas Sinha Department of Data Science	Jan 2025 - Present				
Assistant Professor (joint), Department of Computer Science & Engineering	Jan 2022 - Present				
Assistant Professor, Department of Information Science	Aug 2021 - Dec 2024				
Research Assistant Professor, Department of Computer Science & Engineering	Dec 2019 - Aug 2021				
Loyola University Chicago					
Adjunct Faculty, Department of Computer Science	Aug 2017 - May 2019				
Northwestern University					
 Postdoctoral Fellow, Department of Physics & Astronomy 	Sep 2016 - Nov 2019				
Research Assistant, Department of Physics & Astronomy	Jun 2009 - Jun 2016				
Teaching Assistant, Department of Physics & Astronomy	Sep 2008 - Jun 2009				
EDUCATION					
Northwestern University, Ph.D. in Physics	June 2016 June 2009 June 2005				
Northwestern University, M.S. in Physics					
Zhejiang University, China, B.S. in Physics					

GRANTS

(Total Awarded Funding as PI/Co-PI: **\$500,572**)

Current Support

٠	NSF REU Site on Vector Embeddings (PI)	Mar 2023 - Feb 2026	
	"REU Site: Beyond Language: Training to Create and Share Vector Embeddings ac	ross Applications"	
	(\$403,547)		
•	NSF REU Supplement on Vector Embeddings (PI)	Mar 2024 - Feb 2026	
	Supplemental support to the NSF REU Site award (\$20,000)		
•	COI Seed Grant (PI)	Jan 2025 - Jan 2026	
	"Integrative AI Models for Enhanced Wildfire Prediction and Disaster Mitigation"	(\$5,000)	
•	TACC-Lonestar6 Allocation (PI)	Jan 2022 - Jan 2026	
	17,000 SUs awarded for various research projects at Deep SIX Lab		
•	Google Cloud Education Grant (PI)	Dec 2019 - Jan 2026	
	\$32,500 google cloud credits awarded for various courses taught at UNT		
•	NSF HSI Implementation and Evaluation (Faculty Participant)	Nov 2022 - Oct 2025	
	"Developing a High-Quality Academic Environment for Broadening Participation of Hispanic Students in		
	Computing" (\$499,608)		

Pending Support

- NSF REU Site on Responsible Generative AI (Sr. Personnel) Mar 2025 Feb 2028 "REU Site: Making Generative Artificial Intelligence Responsible" (\$465, 000)
 UNT Research Seed Grant (PI) Jul 2025 - Jun 2026 Monetary support to strengthen resubmissions of my NSF CAREER proposal (\$9,993.64)

 Past Support

 AI4ALL College Pathways Program (PI) Nov 2020 - May 2024 \$22,525 funded to engage UNT underrepresented undergraduate students in a joint AI4ALL-UNT online AI course to develop interest and skills in AI
 UNT Research Seed Grant (PI) Jan 2022 - Jan 2023 "Machine Learning in High-Energy Particle Physics through the GlueX and PANDA Collaborations" (\$10,000)
 - COI Seed Grant (PI) Jan 2023 Jan 2024 "Creating, Organizing, and Sharing Vector Embeddings across Application Domains" (\$4,000)
 - **CyBR-MSI: IRR Program (Co-PI)** Nov 2023 Aug 2024 Cohort II of the Capacity Building for Research at Minority-Serving Institutions: Infrastructure Research Readiness (\$3,000)
 - NSF REU Site on Accelerated Deep Learning (Sr. Personnel) Jan 2021 Dec 2023 "REU Site: Interdisciplinary Research Experience on Accelerated Deep Learning through A Hardware-Software Collaborative Approach" (\$389, 725)
 - NSF REU Site on Data Analytics and Information Retrieval (Faculty Mentor) Mar 2019 Feb 2024 "REU Site: Data Analytics and Information Retrieval" (\$400, 000)

FELLOWSHIPS AND AWARDS

- Faculty Excellence Award from the College of Information at UNT (2023)
- **GHC 22 Faculty Scholarship** awarded full registration for the 2022 Grace Hopper Celebration virtual conference and free one-year AnitaB.org membership (2022)
- Northwestern Professional Development Travel Grant awarded \$500 for traveling to the 59th annual Illinois Speech-Language-Hearing Association Convention (2019)
- Jefferson Lab Student Travel Grant awarded \$400 for attending the 2016 GlueX Physics and Analysis Workshop (2016)
- Northwestern University Fellowship funded my first year of graduate study (2008)
- **Huang Fellowship** awarded \$5000 for academic excellence in the pursuit of scientific knowledge and understanding (2007)
- Graduate with Honors Distinction from Zhejiang University and Zhejiang province of China (2005)
- Xinyada Scholarship awarded ¥1500 for academic excellence (2005)
- First Prize of Excellent Student Scholarship awarded ¥4000 for being top 1% in the department (2004)
- Excellent English Scholarship awarded \neq 500 for my English excellence (2004)
- **Title of All-Round Student** for having good character, grade and sport (2003)
- First Prize of Excellent Student Scholarship awarded ¥4000 for being top 1% in the department (2003)
- Third Prize of Excellent Student Scholarship awarded ¥1000 for being top 10% in the department (2002)

PUBLICATIONS

(100+ publications, 4000+ citations, 36 h-index - Google Scholar; students are marked with *)

Refereed Journal Articles in Data Science

1. Bevara R*, Mannuru N*, Karedla S.*, Lund B., **Xiao T.**, Pasem H*, Dronavalli S*., & Rupeshkumar S.* (2025). Resume2Vec: Transforming Applicant Tracking Systems with Intelligent Resume Embeddings for

Precise Candidate Matching. Electronics, 14(4), 794 (IF: 2.9).

- 2. Yi Z.*, Xiao T., & Albert M. V. (2025). A Survey on Multimodal Large Language Models in Radiology for Report Generation and Visual Question Answering. *Information*, 16(2), 136 (IF: 3.1).
- Biancardi M.*, Zhou Y, Kang W., Xiao T., Grubesic T., Nelson J, & Liang L. (2024). Exploring Spatiotemporal Dynamics, Seasonality, and Time-of-Day Trends of PM_{2.5} Pollution with a Low-Cost Sensor Network: Insights from Classic and Spatially Explicit Markov Chains. *Applied Geography*, 172, 103414 (IF: 4.0).
- 4. Bevara R.*, Mannuru N.*, Karedla S.*, & **Xiao T.** (2024). Scaling Implicit Bias Analysis across Transformer-based Models through Embedding Association Test and Prompt Engineering. *Applied Sciences*, *14(8)*, 3483 (IF: 2.8).
- Phan N.*, Madali N.*, Behpour S.*, & Xiao T. (2023). An Interactive Web-based Dashboard to Examine Trending Topics: Application to Financial Journals. *Journal of Information & Knowledge Management*, 22(6), 2350050 (IF: 1.2).
- Tabashum T.*, Xiao T., Jayaraman C., Mummidisetty C. K., Jayaraman A., & Albert M. V. (2022). Autoencoder Composite Scoring to Evaluate Prosthetic Performance in Individuals with Lower Limb Amputation. *Bioengineering 2022, 9(10),* 572 (IF: 4.6).
- Gaynes B., Zaffer A.*, Yousefzai R.*, Chazaro-Cortes M., Colletta K, Kletzel S. L., Jost M. B., Park Y., Chawla J, Albert M. V., & Xiao T. (2022). Variable Abnormality of the Melanopsin-derived Portion of the Pupillary Light Reflex in Patients with Parkinson's Disease and Parkinsonism Features. *Neurological Sciences*, 43(1), 349-356 (IF: 3.3).
- Behpour S.*, Mohammadi M., Albert M. V., Alam Z., Wang L., & Xiao T. (2021). Automatic Trend Detection: Time-Biased Document Clustering. *Journal of Knowledge-Based Systems*, 220, 106907 (IF: 8.8).
- Tabashum T.*, Zaffer A.*, Yousefzai R.*, Colletta K., Jost M. B., Park Y., Chawla J., Albert M. V., Gaynes B., & Xiao T. (2021). Detection of Parkinson's Disease through Automated Pupil Tracking of the Post-illumination Pupillary Response. *Frontiers in Medicine* 8, 645293 (IF: 3.9).
- Zelman S.*, Dow M.*, Tabashum T.*, Xiao T., & Albert M. V. (2020). Accelerometer-based Automated Counting of Ten Exercises without Exercise-specific Training or Tuning. *Journal of Healthcare Engineering*, 2020, 8869134 (IF: 3.8).
- Sok P.*, Xiao T., Azeze Y.*, Jayaraman A., & Albert M. V. (2018). Activity Recognition for Incomplete Spinal Cord Injury Subjects using Hidden Markov Models. *IEEE Sensors Journal*, 18 (15), 6369-6374 (IF: 4.3).

Refereed Conference Papers in Data Science

- 1. Nickfarjam A. M., Hosseini F.*, Kia Z. S.*, Arani L. S., & Xiao T. (2025, July 4-6, Accepted). *White Blood Cell Detection and Counting Using Particle Swarm Optimization*. International Conference on Informatics Management and Technology in Healthcare (ICIMTH 2025), Athens, Greece.
- Hosseini F.*, & Xiao T. (2025, April 5-6). Using Dynamic Graph Neural Networks for Temporal Analysis in Financial Markets. IEEE 4th International Conference on Computing and Machine Intelligence (ICMI 2025), Mt Pleasant, Michigan, USA.
- Nickfarjam A. M., Dalilian M., Zargari S. A.*, Farzandipour M., Hosseini F.*, & Xiao T. (2025, April 5-6). *Comparison of Deep Learning Methods for Age Determination in Forensic Clients Aged 5-18 Years*. IEEE 4th International Conference on Computing and Machine Intelligence (ICMI 2025), Mt Pleasant, Michigan, USA.
- Xiao T., Guha P.*, & Tajuddin A.* (2024, November 3-7). Social Engagement Embeddings of Parkinson's Disease through Autoencoders. The 9th International Conference on Informatics and Assistive Technologies for Health-Care, Medical Support and Wellbeing (HEALTHINFO 2024), Nice, France.
- Behpour S., Ryan S., Bevara R.*, Bonds C*, & Xiao T. (2024, October 21-24). *Triangulating Mixed Methods to Assess Trends and Impacts in the Journal of International Economic Law*. The 19th International Conference on Knowledge Management 2024 "Navigating Inequities and Social Justice in the

Age of Artificial Intelligence" (ICKM 2024), Kent, Ohio, USA.

- 6. Ali S.*, Zhang S.*, Mhatre S.*, & Xiao T. (2024, September 30 October 2). Advancing Wildfire Predictive Models: A Novel Dataset for Next-Day Wildfire Spread. Artificial Intelligence x Science, Engineering, and Technology (IEEE AIXSET), Laguna Hills, California, USA.
- Bevara R.*, Wagenvoord I.*, Hosseini F.*, Sharma H.*, Nunna V.*, & Xiao T. (2024, September 5-6). *Census2Vec: Enhancing Socioeconomic Predictive Models with Geo-Embedded Data*. The 10th Intelligent Systems Conference 2024 (IntelliSys 2024), Amsterdam, The Netherlands.
- Veluru V.*, Xiao T., Addagudi S., Mohanraj G.*, & Kumar S.*(2024, April 19-20). Machine Learning Optimization Model to Predict Fantasy Basketball Teams. The 2024 International Conference on Computing and Data Science (ICCDS 2024), Chennai, India.
- 9. Bevara R.*, Yarra D.*, Kolli H.*, Sanku S.* & Xiao T. (2023, December 1). *Customer Segmentation Beyond K-Means: A Deep and Hybrid Perspective with Autoencoders Based Behavioral Embeddings*. The 2023 Multidisciplinary Information Research Symposium (MIRS 2023), Denton, TX, USA.
- Zarei M.*, Hosseini F.*, Nickfarjam A. M., & Xiao T. (2023, November 10-11). Predicting User Interest using Hierarchical-based Clustering for Recommender Systems. The 7th International Conference of SNIKOM 2023 (ICosNIKOM 2023), Binjai, Indonesia.
- 11. Bevara R.*, **Xiao T.**, Hosseini F.*, & Ding J. (2023, October 23-26). *Bias Analysis in Language Models using An Association Test and Prompt Engineering*. The 23rd IEEE International Conference on Software Quality, Reliability, and Security (IEEE QRS 2023), Chiang Mai, Thailand.
- 12. Ali S.*, Goel A.*, Singirikonda A.*, Khan A.*, & **Xiao T.** (2022, December 5-9). *Towards a Comprehensive Dataset for Next-Day Wildfire Prediction*. The 22nd IEEE International Conference on Software Quality, Reliability, and Security (IEEE QRS 2022), Guangzhou, China.
- Yi Z.*, Xiao T., Kaz-Onyeakazi I.*, Ratnam C.*, Bawja Y.*, & Nelson P.* (2022, June 23-24). Stock2Vec: An Embedding to Improve Predictive Models for Companies. The 17th International Conference on Knowledge Management 2022 "Knowledge, Uncertainty and Risks: From individual to global scale" (ICKM 2022), Potsdam, Germany.
- Phan N.*, Madali N.*, Behpour S.*, & Xiao T. (2022, June 23-24). An Interactive Web-based Dashboard to Examine Trending Topics: Application to Financial Journals. The 17th International Conference on Knowledge Management 2022 "Knowledge, Uncertainty and Risks: From individual to global scale" (ICKM 2022), Potsdam, Germany.
- 15. Xiao T., Greenberg R., & Albert M. V. (2021, June 26 July 1). Design and Assessment of a Task-driven Introductory Data Science Course Taught Concurrently in Multiple Languages: Python, R, and MATLAB. The 26th ACM Conference on Innovation and Technology in Computer Science Education (ITiCSE 2021), online.
- Xiao T., Tabashum T.*, Metwally B.*, Albert M. V., Du A.*, Jebamalaidass R.*, Leal M.*, & Oliveira E.* (2020, February 3-5). *Conversation Moderator: A Mobile App for Tracking Individual Speaking in Group Conversations*. IEEE 14th International Conference on Semantic Computing (ICSC 2020), San Diego, California, USA.

Refereed Journal Articles in Physics

- Pybus J. R., Ehinger L., Kolar T. *et al.* (59 authors ordered alphabetically) (2025). First Measurement of Near- and Sub- Threshold J/ψ Photoproduction off Nuclei. *Physical Review Letter*, *134(20)*, 201903 (IF: 8.1).
- Accardi A., Achenbach P., Adhikari D. *et al.* (443 authors ordered alphabetically) (2024). Strong Interaction Physics at the Luminosity Frontier with 22 GeV Electrons at Jefferson Lab. *Eur. Phys. J. A 60*, 173 (IF: 2.6).
- 3. GlueX Collaboration (156 authors ordered alphabetically) (2022). Technical Design Report for the Endcap Disc DIRC. *Journal of Physics G: Nuclear and Particle Physics, 49(12),* 120501 (IF: 3.5).
- 4. PANDA Collaboration (324 authors ordered alphabetically) (2021). PANDA Phase One: PANDA Collaboration. *The European Physical Journal A*, *57*(*6*), 184 (IF: 2.6).

- 5. PANDA Collaboration (324 authors ordered alphabetically) (2021). Study of Excited Ξ Baryons with the PANDA Detector. *The European Physical Journal A*, *57(4)*, 149 (IF:2.6).
- 6. PANDA Collaboration (324 authors ordered alphabetically) (2021). The Potential of Λ and Ξ Studies with PANDA at FAIR. *The European Physical Journal A*, 57(4), 154 (IF: 2.6).
- 7. PANDA Collaboration (324 authors ordered alphabetically) (2021). Feasibility Studies for the Measurement of Time-like Proton Electromagnetic Form Factors from $pp \rightarrow \mu^+\mu^-$ at PANDA at FAIR. *The European Physical Journal A*, 57(1), 30 (IF: 2.6).
- 8. GlueX Collaboration (156 authors ordered alphabetically) (2021). The GLUEX Beamline and Detector. *Nuclear Instruments and Methods in Physics Research Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 987*, 164807 (IF: 1.4).
- 9. GlueX Collaboration (156 authors ordered alphabetically) (2020). Measurement of the Photon Beam Asymmetry in $\gamma p \rightarrow K^+ \Sigma^0$ at $E_{\nu} = 8.5$ GeV. *Physical Review C, 101*, 065206 (IF: 3.1)
- 10. GlueX Collaboration (156 authors ordered alphabetically) (2019). Beam Asymmetry Σ for the Photoproduction of η and η' Mesons at $E_{\gamma} = 8.8$ GeV. *Physical Review C, 100*, 052201(R) (IF: 3.1).
- GlueX Collaboration (156 authors ordered alphabetically) (2019). First Measurement of Near-Threshold J/ψ Exclusive Photoproduction off the Proton. *Physical Review Letter*, *123*, 072001 (IF: 8.1).
- 12. PANDA Collaboration (324 authors ordered alphabetically) (2019). Precision Resonance Energy Scans with the PANDA Experiment at FAIR. *The European Physical Journal A*, 55, 1-18 (IF: 2.6).
- 13. PANDA Collaboration (324 authors ordered alphabetically) (2019). Technical Design Report for the PANDA Barrel DIRC Detector. *Journal of Physics G: Nuclear and Particle Physics, 46*, 045001 (IF: 3.5).
- Xiao T., Dobbs S., Tomaradze A., & Seth K. K. (2018). Measurements of Ω⁻ Branching Fractions. *Physical Review D*, 98 (1), 012007 (IF: 5.4).
- 15. Xiao T., Dobbs S., Tomaradze A., & Seth K. K. (2018). Precision Measurement of the Hadronic Contribution to the Muon Anomalous Magnetic Moment. *Physical Review D*, 97 (3), 032012 (IF: 5.4).
- Dobbs S., Seth K. K., Tomaradze A., Xiao T., & Bonvicini G. (2017). Hyperon Form Factors and Diquark Correlations. *Physical Review D*, 96 (9), 092004 (IF: 5.4).
- 17. Tomaradze A., Dobbs S., **Xiao T.**, & Seth K. K. (2015). Precision Measurement of the Mass of the D^{*0} Meson and the Binding Energy of the X(3872) Meson as a $D^0 \overline{D^{*0}}$ Molecule. *Physical Review D*, 91 (1), 011102 (IF: 5.4).
- Tomaradze A., Dobbs S., Xiao T., & Seth K. K. (2015). Comprehensive Study of the Radiative Decays of J/ψ and ψ(2S) to Pseudoscalar Meson Pairs, and Search for Glueballs. *Physical Review D*, *91 (5)*, 052006 (IF: 5.4).
- Dobbs S., Tomaradze A., Xiao T., Seth K. K., & Bonvicini G. (2014). First Measurements of Timelike Form Factors of the Hyperons, Λ⁰, Σ⁰, Σ⁺, Ξ⁰, Ξ⁻, and Ω⁻, and Evidence of Diquark Correlations. *Physics Letter B*, 739, 90-94 (IF: 4.8).
- Tomaradze A., Dobbs S., Xiao T., Seth K. K., & Bonvicini G. (2014). High Precision Measurement of the Masses of the D⁰ and K_S Mesons. *Physical Review D*, 89 (3), 031501 (IF: 5.4).
- Seth K. K., Dobbs S., Tomaradze A., Xiao T., & Bonvicini G. (2014). First Measurement of the Electromagnetic Form Factor of the Neutral Kaon at a Large Momentum Transfer and the Effect of SU(3) Breaking. *Physics Letters B*, 730, 332-335 (IF: 4.8).
- 22. Xiao T., Dobbs S., Tomaradze A., & Seth K. K. (2013). Observation of the Charged Hadron $Z_c^{\pm}(3900)$ and

Evidence for the Neutral $Z_c^0(3900)$ in $e^+e^- \rightarrow \pi\pi J/\psi$ at $\sqrt{s} = 4170$ MeV. *Physics Letter B*, 727 (4), 366-370 (IF: 4.8).

23. Xiao T., Dobbs S., Tomaradze A., Seth K. K., & Bonvicini G. (2013). Search for Radiative Production of

the 'Exotic' Mesons X(3872, 3915, 3930, 3940) from ψ(4160). *Physical Review D*, 87 (5), 057501 (IF: 5.4).

- 24. Seth K. K., Dobbs S., Metreveli Z., Tomaradze A., **Xiao T.**, & Bonvicini G. (2013). Electromagnetic Structure of the Proton, Pion, and Kaon by High-Precision Form Factor Measurements at Large Timelike Momentum Transfers. *Physical Review Letter*, *110* (2), 022002 (IF: 8.1).
- 25. Dobbs S., Metreveli Z., Seth K. K., Tomaradze A., **Xiao T.** *et al.* (2013). First Measurement of the Form Factors in the Decays $D^0 \rightarrow \rho^- e^+ \upsilon_a$ and $D^+ \rightarrow \rho^0 e^+ \upsilon_a$. *Physical Review Letter*, 110 (13), 131802 (IF: 8.1).
- Metreveli Z., Dobbs S., Tomaradze A., Xiao T., Seth K. K., Yelton J., Asner D. M., Tatishvili G., & Bonvicini G. (2012). Phase Difference between the Electromagnetic and Strong Amplitudes for ψ(2S) and J/ψ Decays into Pairs of Pseudoscalar Mesons. *Physical Review D*, 85 (9), 092007 (IF: 5.4).
- 27. Dobbs S., Metreveli Z., Tomaradze A., **Xiao T.**, & Seth K. K. (2012). First Measurement of Exclusive Hadronic Decays of Υ(1*S*) and Υ(2*S*). *Physical Review D*, 86 (5), 052003 (IF: 5.4).
- 28. Dobbs S., Metreveli Z., Tomaradze A., **Xiao T.**, & Seth K. K. (2012). Observation of $\eta_b(2S)$ in $\Upsilon(2S) \rightarrow \gamma \eta_b(2S)$, $\eta_b(2S) \rightarrow$ hadrons, and Confirmation of $\eta_b(1S)$. *Physical Review Letter*, *109 (8)*, 082001 (IF: 8.1).

Refereed Conference Papers in Physics

- Dobbs S., Tomaradze A., Xiao T., & Seth K. K. (2015, September 13-18). *First Measurements of Hyperon Time-like Form Factors at Large Q² and Evidence of Diquark Correlations*. XVITH International Conference on Hadron Spectroscopy (Hadron2015), Newport News, VA, USA.
- Dobbs S., Tomaradze A., Xiao T., & Seth K. K. (2015, September 13-18). A Comprehensive Study of the Radiative Decays of J/ψ and ψ(2S) to Pseudoscalar Meson Pairs, and Search for Glueballs. XVITH International Conference on Hadron Spectroscopy (Hadron 2015), Newport News, VA, USA.
- Dobbs S., Tomaradze A., Xiao T., & Seth K. K. (2012, May 29 June 3). *Binding Energy of X(3872) and Precision Measurement of D⁰ Mass*. The 11th Conference on the Intersections of Particle and Nuclear Physics (CIPANP 2012), St. Petersburg, FL, USA.
- 4. Dobbs S., Tomaradze A., Xiao T., & Seth K. K. (2012, May 29 June 3). Observation of η_b(2S)in Y(2S) → γη_b(2S), η_b(2S) → hadrons, and confirmation of η_b(1S) at CLEO. The 11th Conference on the Intersections of Particle and Nuclear Physics (CIPANP 2012), St. Petersburg, FL, USA.

Book Chapters

- Tabashum T.*, Nandigam S.*, & Xiao T. (2022). Autoencoders and Embeddings: How Unsupervised Structural Learning Enables Fast and Efficient Goal-directed Learning. In M. V. Albert, L. Lin, M. L. Spector, & L. S. Dunn, *Bridging Human and Artificial Intelligence* (pp. 47-63). Springer.
- Xiao T., & Albert M. V. (2021). Big Data in Medical AI: How Larger Datasets Lead to Robust, Automated Learning for Healthcare. In F. Jotterand, & M. Lenca, *Artificial Intelligence in Brain and Mental Health: Philosophical, Ethical & Policy Issues* (pp. 11-25). Springer.

Oral Presentations and Posters

- Patterson R. M., Camp K., Bond E.*, Dashner Z.*, Lovrien A.*, Fulda K., Espinosa A., Kennedy S., Siripurapu G*., Zhang H*., Xiao T., & Albert M. V. (2025, June 22-25, Accepted). Utilizing Technology and AI Approaches to Facilitate Independence and Resilience in Older Adults [Poster]. 2025 ASME SB3C Summer Bioengineering Conference (SBC 2025), Santa Ana Pueblo, New Mexico, USA.
- Mhatre S.*, & Xiao T. (2025, April 1). Creating Datasets to Model Next-day Wildfire Spread Implementing Data of Topographical and Meteorological Features [Poster]. UNT Scholars Day 2025, Denton, Texas, USA.

- 3. Zhang S.*, & Xiao T. (2025, April 1). Comprehensive Dataset Utilizing Meteorological and Topographical Features for Next-Day Wildfire Spread Prediction [Poster]. UNT Scholars Day 2025, Denton, Texas, USA.
- Zhang H.*, Xiao T., & Chen H. (2025, February 21). Can Large Language Models Generate High-Quality Grant Proposal Ideas? An Exploratory Study [Poster]. The 2025 Multidisciplinary Information Research Symposium (MIRS 2025), Denton, TX, USA.
- Ali S.*, Zhang S.*, Mhatre S.*, & Xiao T. (2024, October 11-13). Enhancing Wildfire Forecasts: An Extensive Dataset for Next-Day Predictive Models [Oral presentation]. MIT Undergraduate Research Technology Conference (MIT URTC 2024), Cambridge, Massachusetts, USA.
- 6. Lipsmeyer L. L., Albert M.V., & Xiao T. (2023, October 23-26). Sustaining a Persistent Umbrella AI Summer Research Program: Benefits and Lessons of a Decade [Panel]. Empowering Learners in AI 2023, online.
- Khan A.*, Ali S.*, Singirikonda A.*, Goel A.* & Xiao T. (2023, September 13-15). Modeling Wildfire Spread Using Deep Learning and Heterogenous Remote Sensing Data [Poster]. The 2023 CMD-IT/ACM Richard Tapia Celebration of Diversity in Computing Conference (TAPIA 2023), Dallas, TX, USA.
- Upreti S.*, Kshirsagar S.*, Behpour S., Vachakarla A.* & Xiao T. (2023, September 13-15). *Temporal Topic Modeling to Determine Trends in Artificial Intelligence* [Poster]. The 2023 CMD-IT/ACM Richard Tapia Celebration of Diversity in Computing Conference (TAPIA 2023), Dallas, TX, USA.
- Haleem Y.*, Wagenvoord I.*, Wei Q.*, Xiao T., Shu T., & Ji Y. (2023, August 29-31). Understanding Nationwide Power Outage and Restoration for Future Predication [Poster]. The 7th Annual Smoky Mountains Computational Science and Engineering Conference Data Challenge (SMCDC 2023), Knoxville, TN, USA. (Best Poster Award)
- 10. Xiao T. (2023, March 31). *Vector Embeddings for Knowledge beyond Language* [Oral presentation]. Business Analytics Day, Denton, TX, USA.
- 11. Xiao T. (2023, March 22). *Knowledge beyond Language with Vector Embeddings* [Oral presentation]. Day of Data Science, Denton, TX, USA.
- Goel A.*, Singirikonda A.*, & Xiao T. (2023, February 20). Future Wildfire Spread Prediction Utilizing a Comprehensive Remote Sensing Dataset Combining Weather Feature Data [Science fair]. The 72nd Fort Worth Regional Science and Engineering Fair (FWRSEF), Arlington, TX, USA.
- Goel A.*, Singirikonda A.*, & Xiao T. (2023, January 8-12). Wildfire Feature Engineering and Aggregation Utilizing Granularized Geospatial Data [Poster]. The 103rd American Meteorological Society Annual Meeting (AMS 2023), Denver, CO, USA.
- Albert M. V., & Xiao T. (2021, April 9). On-ramp to AI: Lessons from the Introductory Course Software Development for AI [Oral presentation]. The 32nd Annual CCSC South Central Conference, Dallas, TX, USA.
- Olness G., Mahbub I, Albert M. V., Berman D., Xiao T., & Fletcher A. (2021, April 5-8). Development of a Wireless Smart System of Vocalization Sensors for Convergent Evidence of Post-discharge Communicative Participation in Everyday Life Contexts: A Status Report [Poster]. 2021 Aphasia Access Leadership, online.
- 16. Xiao T., Tabashum T., Behpour S., Urs N., & Albert M.V. (2021, February 13). *What It's Like for the Humans behind Advanced in Artificial Intelligence* [Panel]. Digital Divas 2021, CSTA Dallas Fort Worth, online.
- Tabashum T.*, Xiao T., Gaynes B., Chawla J., Colleatta D., & Albert M. V. (2020, Oct 14-17). Automated Pupil Tracking For Parkinson's Disease Biomarker Detection By Integrating Kalman Filters In A Robust User Interface [Poster]. The 2020 Biomedical Engineering Society conference (BMES 2020), online.
- Xiao T., Tabashum T.*, Olness G., Mahbub I., Berman D., Tasneem N. T., & Albert M. V. (2020, October 21-24). *Mobile Diarization Dashboard Application and Remote Vocalization Sensor Prototype for Evaluating Communication Rehabilitation Effectiveness* [Poster]. American Congress of Rehabilitation Medicine 97th Annual Conference (ACRM 2020), online.
- 19. Olness G., Mahbub I, Albert M. V., Berman D., Xiao T., & Fletcher A. (2020, October 21-24). Wireless Smart System of Vocalization Sensors for Convergent Evidence of Post-Discharge Communicative

Participation in Everyday Life Contexts [Oral presentation]. Launchpad Competition American Congress of Rehabilitation Medicine 97th Annual Conference (ACRM 2020), online.

- 20. Ranasinghe I., Jayaraman A., Xiao T., Thompson M, Dantu R, & Albert M. V. (2020, October 21-24). Home Care Robotic Assistant Prototype for Remote Human Supervision: Development and Pilot Analysis of Exercise Repetition Counting over Multiple Viewing Angles [Poster]. American Congress of Rehabilitation Medicine 97th Annual Conference (ACRM 2020), online.
- Zelman S.*, Dow M.*, Tabashum T.*, Albert M. V., & Xiao T. (2020, September 16-18). Automatic Counting Methods Applied to Unspecified Repetitive Physical Activities [Poster]. 2020 ACM Richard Tapia Conference, online.
- Albert M. V., Xiao T., Dantu M., Thompson M., & Jayaraman A. (2020, January 6-7). *Physbot Therapy:* Semi-autonomous Visual Observation and Support for Home-based Physical Therapy Exercises [Poster]. Advancing Health through Science: Smart and Connected Health (SCH) Principal Investigator Meeting, NSF Headquarters, Alexandria, VA, USA.
- 23. Mahbub I., Berman D., Albert M. V., Xiao T., & Olness G. (2020, January 6-7). Wireless Smart Vocalization Sensors for Convergent Evidence of Rehabilitation Effectiveness [Poster]. Advancing Health through Science: Smart and Connected Health (SCH) Principal Investigator Meeting, NSF Headquarters, Alexandria, VA, USA.
- 24. Xiao T. (2020, December 7). *Clinical Research in Signal Processing* [Oral presentation], Biomedical Engineering Departmental Seminar, University of North Texas, Denton, TX, USA.
- 25. Xiao T. (2020, November 18). *Data Science in Signal Processing: from particle accelerators to inertial sensors, video, and audio processing* [Oral presentation]. Department of Information Science Brown Bag Research Seminar, University of North Texas, Denton, TX, USA.
- Xiao T. (2019, February 9). Conversation Moderator: Using Machine Learning to Encourage Speaking in Groups [Oral presentation]. Annual Convention, Illinois Speech Language Hearing Association, Rosemont, IL, USA.
- Xiao T. (2018, October 16). An Introduction to Modern Machine Learning Principles and Techniques from Intuitions to Applications [Oral presentation]. Chinese Ministry of Industry and Information Technology Representatives at Loyola University Chicago, Chicago, IL, USA.
- 28. Xiao T. (2018, April 9-13). *Machine Learning Explained* [Oral presentation]. Business Analytics Week at Quinlan School of Business, Loyola University Chicago, Chicago, IL, USA.
- 29. Xiao T. (2018, January 30). A data-driven road to discovering an exotic particle: Z_{a}^{0} (3900) [Oral

presentation]. Physics Department Colloquium, DePaul University, Chicago, IL, USA.

- Adamski J*, Pukhrambam L.*, Arshad R*, Gulati R*, & Xiao T. (2016, June 2). *Pupil Dilation Analysis* [Poster]. First Year Research Experience (FYRE) program at Loyola University Chicago: Math/Stats/CS FYRE Poster Session and FYRE Presentation, Chicago, IL, USA.
- Dobbs S., Tomaradze A., Xiao T. & Seth K. K. (2015, October 16). CLEO collaboration update [Poster]. Department of Physics and Astronomy, Northwestern University, Chicago, IL, USA.
- 32. Xiao T. (2014, April 30). Observation of $Z_c(3900)$ from $\psi(4160)$ [Oral presentation]. Physics Brown Bag Lunch Seminar, Northwestern University, Evanston, IL, USA.
- Dobbs S., Tomaradze A., Xiao T., & Seth K. K. (2013, October 18). Strong Interaction Studies with PANDA (Proton-antiproton annihilation at Darmstadt) [Poster], Department of Physics and Astronomy Department, Northwestern University, Evanston, IL, USA.
- Xiao T. (2012, May 30 June 13). Precision Measurement of the Hadronic Contribution to the Muon Anomalous Magnetic Moment [Oral presentation]. Jefferson Lab Advanced Study Institute, Williamsburg, VA, USA
- 35. Xiao T. (2012, January 27). Search for Radiation Production of X(3872, 3915, 3930, 3940) from $\psi(4160)$ [Oral presentation]. CLEO Collaboration Meeting, Ithaca, NY, USA.

TEACHING AND MENTORING

Designed Courses

- CSCE 3214/5214: Software Development for Artificial Intelligence (2020)
- COMP 180: Computing and Data Analysis for the Sciences (2018)

Developed Online Courses (CLEAR Approved)

- INFO 5502: Analytic Tools, Techniques and Methods (2023)
- CSCE 3214/5214: Software Development for Artificial Intelligence (2022)

Taught Courses

- DTSC 5502: Analytic Tools, Techniques, and Methods (2021 Present)
- INFO 6660: Readings in Information Science (2025 Present)
- INFO 6900: Special Problems (2021 Present)
- INFO 5900: Special Problems (2023 Present)
- INFO 5090: Practicum and Internship in the Field Study (2021)
- CSCE 5950: Master's Thesis (2024 Present)
- CSCE 4999: Senior Thesis (2023 Present)
- CSCE 5934: Directed Study (2023 Present)
- CSCE 5900: Special Problems (2022 Present)
- CSCE 6940: Individual Research (2020 Present)
- CSCE 4890: Direct Study (2020 Present)
- CSCE 4930: CSCE Topics (2021)
- CSCE 3214/5214: Software Development for Artificial Intelligence (2021)
- CSCE 4930/5300: Big Data and Data Science (2020 2021)
- CSCE 4200/5200: Information Retrieval and Web Search (2019)
- COMP 490: Independent Project (2018 2019)
- COMP 398: Independent Study (2017 2019)
- COMP 180: Computing and Data Analysis for the Sciences (2018 2019)
- COMP 150: Introduction of Computing (2017)

Teaching Certificates

- Experiential Learning Faculty Certificate, Loyola University Chicago
- Teaching Certificate, Northwestern University

PhD Dissertation Committee Chair/Co-Chair

- Sahar Behpour, Information Science (Defended dissertation in Spring 2022)
 - Thesis Topic: Weight Initialization for Convolutional Neural Networks Using Unsupervised Machine Learning
 - Co-Chair: Dr. Mark Albert
- Ziruo Yi, Computer Science and Engineering (Defended proposal in Fall 2023)
 - Proposal Topic: Automated Report Generation and Visual Question Answering in Radiology with Multimodal Learning
 - Co-Chair: Dr. Mark Albert
- Farahnaz Hosseini, Computer Science and Engineering (Defended proposal in Spring 2025)
 - Proposal Topic: Enhancing Socioeconomic Predictive Modeling Using Graph Neural Networks and Geo-Embedded Census Data
 - Co-Chair: Dr. Sanjukta Bhowmick
- Syed Ali, Computer Science and Engineering
- Richard Cevallos, Information Science

- Co-Chair: Dr. Brady Lund
- Miguel Quintana, Computer Science and Engineering
 - Co-Chair: Dr. Jing Yuan
- Haoxuan Zhang, Information Science
 - Co-Chair: Dr. Haihua Chen
- Jinyu Liu, Information Science
 - Co-Chair: Dr. Lingzi Hong
 - Jenny Liang, Information Science
 - Co-Chair: Dr. Yang Zhang

PhD Dissertation Committee Member

- Nayana Pampapura Madali, Information Science (Defended dissertation in Spring 2024)
 - o Thesis Topic: Autism Knowledge, Awareness, Misinformation and Stigma: Mixed-Methods Study
 - Chair: Dr. Suliman Hawamdeh
- Cheran Ratnam, Information Science (Defended dissertation in Fall 2024)
 - Thesis Topic: Wearables in Healthcare: Popular Topics and Sentiments in Reddit and a Preliminary Quantitative Study on Health Professionals' Wearable Adoption
 - Chair: Dr. Koji Fuse
- Steve Wang, Computer Science and Engineering (Defended proposal in Spring 2022)
 - Proposal Topic: Autoencoder Approach to Quantify Gait Data for Surgery Result Prediction in Children with Cerebral Palsy
 - Chair: Dr. Mark Albert
- Khalid Alkhaldi, Computer Science and Engineering (Defended proposal in Spring 2024)
 - Proposal Topic: Xvision: Voice-Based Programming Agent for Python Programming Language
 - Chair: Dr. Stephanie Ludi
- Thasina Tabashum, Computer Science and Engineering (Defended proposal in Fall 2024)
 - Proposal Topic: Improving Gait Quality Assessment and Predict Fall Risk Through Robust Model
 - Chair: Dr. Mark Albert
- Twumasi Mensah-Boateng, Computer Science and Engineering (Passed qualifying exam in Fall 2024)
 - Chair: Dr. Jing Yuan
- Poulomi Guha, Computer Science and Engineering
 - Co-Chairs: Dr. Sagnik Ray Choudhury, Dr. Ajita Rattani
- Qi Cai, Computer Science and Engineering
 - Chair: Dr. Jing Yuan

Master's Dissertation Committee Chair

• Dhruvil Dudhat, Artificial Intelligence

Master's Dissertation Committee Member

- Bhavani Rachakatla, Computer Science
 - Thesis Topic: Automated Pre-Impact Fall Detection for Fall Mitigation Using a Wearable Airbag Belt
 - Chair: Dr. Mark Albert

Undergraduate Dissertation Committee Chair

- Michael Biancardi, CS and Math (Defended dissertation in Spring 2023)
 - Thesis Topic: Exploring Spatiotemporal Dynamics, Seasonality, and Time-of-Day Trends of PM2.5 Pollution with a Low-Cost Sensor Network: Insights from Classic and Spatially Explicit Markov Chains

PhD Students

- Jinyu Liu, Information Science (Summer 2025 Present)
- Haoxuan Zhang, Information Science (Fall 2024 Present)
- Richard Cevallos, Information Science (Fall 2023 Present)
- Farahnaz Hosseini, Computer Science and Engineering (Fall 2023 Present)
- Miguel Quintana, Computer Science and Engineering (Summer 2023 Present)
- Syed Haider Ali, Computer Science and Engineering (Spring 2022 Present)
- Ziruo Yi, Computer Science and Engineering (Fall 2021 Present)
- Ali Khan, Computer Science and Engineering (Spring 2022 Spring 2025)
- Ravi Varma Kumar Bevara, Information Science (Spring 2022 Spring 2025)
- Poulomi Guha, Computer Science and Engineering (Spring 2024 Fall 2024)
- Thasina Tabashum, Computer Science and Engineering (Fall 2019 Spring 2024)
- Ashish Kulkarni, Information Science (Spring 2022 Fall 2023)
- Sahar Behpour, Information Science (Spring 2020 Spring 2022)
- Huyen Nguyen, Information Science (Spring 2022)
- Debjani Palit, Information Science (Fall 2021)
- Ijeoma Kaz-Onyeakazi, Information Science (Fall 2021)
- Cheran Ratnam, Information Science (Fall 2021)
- Nayana Pampapura Madali, Information Science (Fall 2021)

MS Students

- Linto Thomas, Computer Engineering (Fall 2024 Present)
- Dhruvil Dudhat, Artificial Intelligence (Summer 2024 Present)
- Raghu Krishna Balusu, Computer Science (Spring 2024)
- Kavya Vedantham, Data Science (Fall 2023)
- Siddhanth Rupeshkumar, Computer Science (Fall 2023)
- Saipriya Nallamala, Data Science (Summer 2023 Fall 2023)
- Abhivarma Birru, Data Science (Summer 2023)
- Harshitha Pasem, Data Science (Summer 2023)
- Sai Chandra Dronavalli, Data Science (Summer 2023)
- Vemula Dowtya Sri Prasanth, Artificial Intelligence (Summer 2023)
- Hari Kiran Keerthipati, Artificial Intelligence (Spring 2023)
- Zhelu Mai, Business Analytics (Spring 2023)
- Shreeti Upreti, Artificial Intelligence (Spring 2023)
- Shridhar Kshirsagar, Artificial Intelligence (Spring 2023)
- Rana Ghoneim, Artificial Intelligence (Spring 2023)
- Saja Alkarawi, Artificial Intelligence (Spring 2023)
- Vishnuvardhan Veluru, Data Science (Fall 2022 Spring 2023)
- Andrew Fausak, Artificial Intelligence (Summer 2022 Fall 2022)
- Andrew Ray Fausak, Artificial Intelligence (Summer 2022 Fall 2022)
- Bhanuprakash Reddy VaradareddyGari, Data Science (Spring 2022 Fall 2022)
- Alekhya Vachakarla, Computer Science (Spring 2022 Summer 2022)
- Salim Jivani, Artificial Intelligence (Spring 2022 Summer 2022)
- Rafael Moreira, Artificial Intelligence (Spring 2022 Summer 2022)
- Irina Maystorovich, Artificial Intelligence (Spring 2022)
- Ali Shah Solanki, Artificial Intelligence (Fall 2021 Spring 2022)
- Ngoc Phan, Artificial Intelligence (Fall 2021)

- Theophilus Mederios, Artificial Intelligence (Spring 2021)
- Rejoice Jabamalaidass, Computer Science (Fall 2018 Spring 2019)
- Julia Adamski, Computer Science (Summer 2017 Spring 2019)

Undergraduate Students

- Clarissa Ramirez-Chavez, Computer Science (Spring 2025 Present)
- Kolade Olojo, Computer Engineering (Spring 2025 Present)
- Sunny Zhang, TAMS (Summer 2023 Spring 2025)
- Saanvi Mhatre, TAMS (Summer 2023 Spring 2025)
- Jeffrey Jackson, Computer Science (Spring 2024)
- Bradley Ombachi, Computer Science (Spring 2024)
- Sehej Kumar, TAMS (Summer 2023 Spring 2024)
- Aditya Singirikonda, TAMS (Summer 2022 Spring 2024)
- Michael Biancardi, CS and Math (Fall 2022 Spring 2023)
- Anish Goel, TAMS (Summer 2022 Spring 2023)
- Madhav Thamaran, TAMS (Summer 2022)
- Patrick Nolan, Computer Science (Summer 2018 Spring 2019)
- Vincent Acuesta, Computer Science (Spring 2019)
- Zhihao Zhou, Computer Science (Spring 2019)
- Ethan Davidson, Computer Science (Summer 2018 Fall 2018)
- Ian Cowen, Computer Science (Summer 2018 Fall 2018)
- Nikola Gjakovik, Computer Science (Spring 2018)
- Noel Castillo, Computer Science (Summer 2017 Spring 2018)

REU Students

- 2025 Summer: Ioanna Avloniti, Aryanaz Besharatlou, Pelin Egriboyun, Quintina Zheng, John Hippisley, Max Frohman, Logan Seward, Jevon Joseph, Matthew Pearson
- 2024 Summer: Abhigya Koirala, Abigail Miltenberger, Angela Zhang, Jessica Lozoya, Kelsey Charbeneau, Lilian Mohning, Ria Tao, Weston Allen, Thomas Bouchard
- 2023 Summer: Isabelle Wagenvoord, Joseph Cowles, Aparna Bhooshanan, Daniel George, Chimara Okeke, Joshua Pitts, Ella Ghazarian, Venkata Hsith Vattikuti, Camila Nunez, Shane Stevenson
- 2022 Summer: Diya Deepak, Kory Rosen

Student Awards

- NSF-TAPIA Scholarship Sahar Behpour, 2020
- UNT IS Fellowship Sahar Behpour, 2020
- UNT Golden Eagle Award Sahar Behpour, 2021
- UNT Outstanding Academic Achievement Award Sahar Behpour, 2021
- UNT Graduate Research Award Sahar Behpour, 2021
- UNT Great Grads Sahar Behpour, 2022
- UNT COI Early Career Alumni Award Sahar Behpour, 2023
- NSF-TAPIA Scholarship Syed Ali, 2023
- NSF-TAPIA Scholarship Shridhar Kshirsagar, 2023
- NSF Graduate Research Fellowships Program (GRFP) Ali Khan, 2023
- SMCDC Best Poster Award Isabelle Wagenvoord, 2023
- UNT Undergraduate Research Fellowship Aditya Singirikonda, 2023
- UNT Undergraduate Research Fellowship Sehej Kumar, 2023
- Lis and Philip Turner Outstanding Student Paper Award Ravi Varma Kumar Bevara, 2024

- UNT Undergraduate Research Fellowship Sunny Zhang, 2024
- UNT Undergraduate Research Fellowship Saanvi Mhatre, 2024
- UNT STEM Startups Competition Award Syed Ali, 2025
- UNT CCLS Summer Research Fellowship Ziruo Yi, 2025

SERVICE

Professional Service • NSF Grant Review Panelist 2023 - Present National Science Foundation • **Guest Editor,** *Applied Science* 2023 - Present Special Issue: Transformer Deep Learning Architectures: Advances and Applications • Journal and Conference Reviewer 2021 - Present IJITDM, Expert Systems with Applications, Computer Standards & Interfaces, iConference, Digital, etc. • Program Committee Member • IEEE International Conference on Bioinformatics and Biomedicine (BIBM) 2025 - Present • International Conference on Software Quality, Reliability, and Security (QRS) 2024 - Present International Conference on Dependable Systems and Their Applications (DSA) 2023 - Present 0 **University Service** • Committee Member, Consecutive Committee on CCLS 2024 - Present • Co-coordinator, UNT AI Summer Research Program 2021 - Present • Liaison, UNT AI4All College Pathways Program 2020 - Present • Search Committee Member • AI/ML in Physics, Department of Physics 2023-2024 • General CS, Department of Computer Science & Engineering 2022-2023 Computational Linguistics, Department of Linguistics 0 2021-2022 Department Service - Anuradha and Vikas Sinha Department of Data Science • Chair, Student Affairs Committee 2025 - Present • Co-advisor, Data Science Student Organization 2025 - Present • Member, Research and Outreach Committee 2025 - Present • Member, Personnel Affairs Committee 2025 - Present 2025 - Present Member, Workload Procedure Development Committee • **Department Service - Department of Information Science** • Member, PhD Committee 2023 - 2024 • Member, Data Science Faculty Search Committee 2021 - 2024 • **Co-advisor**, Data Science Student Organization 2020 - 2024 • Member, Curriculum Committee 2022 - 2023 Member, Resource and Facilities Committee 2021 - 2022 • **Other Professional and Institutional Service** • Faculty Mentor, Ignite Lab Startup Accelerator 2018 - 2019 Quinlan School of Business, Loyola University Chicago • Graduate Mentor, Women in Physics and Astronomy 2016 - 2019 Northwestern University

•	Project Advisor, CS Summer Program Loyola University Chicago	2017 -	2018
•	Co-organizer , Heilborn Lectures Program Northwestern University	2008 -	2016