



Dr Mairidan Wushouer

Department of Digital and Intelligent Technology | Professor

Biography

Dr Mairidan Wushouer is a Professor and holds a doctoral degree. Dr Wushouer received a bachelor's degree in Computer Science and Technology and a master's degree in Computer Application Technology from Xinjiang University and graduated from the Graduate School of Informatics, Kyoto University, in Japan in 2015 with a doctoral degree in Informatics. He served as a Research Assistant at the National Institute of Information and Communications Technology ("NICT") in Japan, and later worked as a Lecturer and Associate Professor at Xinjiang University. Dr Wushouer is currently a Professor at the School of Computer Science, Guangdong University of Science and Technology. His main research interests include low-resource language information processing, multimodal sentiment analysis and speech synthesis and speech recognition. Dr Wushouer has served as Principal Investigator for a number of projects funded by the National Language Commission, the Natural Science Foundation of Xinjiang Uygur Autonomous Region, industry-commissioned research projects and talent projects, and has participated in several projects funded by the National Natural Science Foundation of China. Dr Wushouer has published a number of papers in international journals and conferences, including ACM Transactions on Asian and Low-Resource Language Information Processing, Neurocomputing and IEEE Access. He has received honours including the Second Prize of the Scientific and Technological Progress Award of the China General Chamber of Commerce and the Education and Teaching Achievement Award of the Computer Academy of Guangdong.

Professional Qualifications

Engineering Education Accreditation Expert, China Engineering Education Accreditation Association

Employment History, including Postdoctoral Appointments

- Apr 2015 – Dec 2016 Research Assistant, Data-driven Intelligent System Research Centre, National Institute of Information and Communications Technology (“NICT”), Japan
- Jan 2017 – Dec 2020 Lecturer, School of Computer Science and Technology, Xinjiang University
- Dec 2020 – Jan 2024 Associate Professor, School of Computer Science and Technology, Xinjiang University
- Feb 2024 – May 2025 Associate Professor, School of Computer Science, Guangdong University of Science and Technology
- Jun 2025 – Present Professor, School of Computer Science, Guangdong University of Science and Technology

Education

- Sep 2002 – Jul 2007 Bachelor’s Degree, Xinjiang University
- Sep 2007 – Jul 2010 Master’s Degree, Xinjiang University
- Oct 2011 – Mar 2015 Doctoral Degree in Informatics, Kyoto University

Research Interests

Language information processing, multimodal sentiment analysis and speech synthesis and

recognition.

Teaching

Academic special-topic project teaching and dissertation supervision.

Honours and Awards

- Outstanding Master's Thesis, School of Information Science and Engineering, Xinjiang University, July 2010.
- Best Presentation Award for “Inducing Bilingual Lexicon Using Pivot Language”, Mairidan Wushouer, Donghui Lin, Toru Ishida and Katsutoshi Hirayama, IPSJ 2013, March 2013.
- Selected for the High-Level Talent Introduction Project of Xinjiang Uygur Autonomous Region, Tianchi Project, December 2017.
- Third Prize of the 2024 Education and Teaching Achievement Award of the Computer Academy of Guangdong, December 2024 (as a Participant).
- First Prize of the 2024 Education and Teaching Achievement Award in Higher Education of the Computer Academy of Guangdong, December 2024 (as a Participant).
- Second Prize of the Scientific and Technological Progress Award under the Science and Technology Award of the China General Chamber of Commerce, a national-level association, December 2025 (as Principal Investigator).

Research Achievements

Publications

Selected recent publications are as follows:

- [1] Tuerhong, G., Dai, X., Tian, L., & Wushouer, M. (2024). An end-to-end image-text matching approach considering semantic uncertainty. *Neurocomputing*, 607, 128386.
- [2] Gao, T.; Wushouer, M.; Tuerhong, G. DMS-YOLOv5: A Decoupled Multi-Scale YOLOv5 Method for Small Object Detection. *Appl. Sci.* 2023, 13, 6124.
- [3] Zhang, J.; Wushouer, M.; Tuerhong, G.; Wang, H. Semi-Supervised Learning for Robust Emotional Speech Synthesis with Limited Data. *Appl. Sci.* 2023, 13, 5724.
- [4] Hou, Shangwu & Tuerhong, Gulambaier & Wushouer, Mairidan. (2023). UsbVisdaNet: User Behaviour Visual Distillation and Attention Network for Multimodal Sentiment Classification. *Sensors*. 23.
- [5] Mairidan Wushouer, Donghui Lin, Toru Ishida, and Katsutoshi Hirayama, A Constraint Approach to Pivot-Based Bilingual Dictionary Induction, *ACM Transactions on Asian and Low-Resource Language Information Processing* 15, no. 1 (2016): 4.
- [6] Mairidan Wushouer, Lin, Donghui; Ishida, Toru; Hirayama, Katsutoshi, Pivot-based bilingual dictionary extraction from multiple dictionary resources, *Lecture Notes in Computer Science*, 2014, 8862: 221~234.
- [7] Hou, Shangwu & Tuerhong, Gulambaier & Wushouer, Mairidan. (2023). VisdaNet: Visual Distillation and Attention Network for Multimodal Sentiment Classification.
- [8] Dai, X.; Tuerhong, G.; Wushouer, M. Globally Guided Confidence Enhancement Network for Image-Text Matching. *Appl. Sci.* 2023, 13, 5658.
- [9] Xiaoxia He, Gulambaier Tuerhong, Mairidan Wushouer and Dai Xin. “Rumors Detection Based on Lifelong Machine Learning,” in *IEEE Access*, vol. 10, pp. 25605- 25620, 2022, doi: 10.1109/ACCESS.2022.3152842.
- [10] S. Mo, G. Tuerhong, M. Wushouer and T. Yibulayin, PCA mix-based Hotelling’s T² multivariate control charts for intrusion detection system, *IET INFORMATION SECURITY*, 2022, 16, 161-177.
- [11] M. Wushouer, Aili Arken, Gulambaier T. Multi-domain Evaluation of Low-resource Chinese–Uyghur Machine Translation, *First CCF Xinjiang Computer Conference (CXCC 2026)*

- [12] Mairidan Wushouer, Gulanbaier Tuerhong and Guo Xu, "BMMAN: A Bi-directional Masked Multimodal Attention Network for Enhanced Image-Text Sentiment Analysis", 2025 International Conference on Computer Science and Computer Intelligence (CSCI 25), December 2025, Las Vegas, U.S.
- [13] M. Wushouer, Xu Guo, Gulanbaier T. et al., Image-text Sentiment Analysis Based on Cross-Modal Interactive Attention, GPC2024.
- [14] Cui, X., Tuerhong, G., Wushouer, M. (2025). Zero-Shot Voice Cloning Based on Target Adaptation and Phoneme-Level Local Feature Embedding. In: Sun, F., Wang, H., Long, H., Wei, Y., Yu, H. (eds) Proceedings of the 3rd International Conference on Machine Learning, Cloud Computing and Intelligent Mining (MLCCIM2024).
- [15] T. Gao, M. Wushouer and G. Tuerhong, "Small Object Detection Method based on Improved YOLOv5," 2022 International Conference on Virtual Reality, Human- Computer Interaction and Artificial Intelligence (VRHCIAI), Changsha, China, 2022, pp. 144-149, doi: 10.1109/VRHCIAI57205.2022.00032.
- [16] Tuerhong, Gulanbaier & Wushouer, Mairidan & Zhang, DongMei. (2021). An Improved K Nearest Neighbour Classifier for High-Dimensional and Mixture Data. Journal of Physics: Conference Series. 1813. 012026. 10.1088/1742- 6596/1813/1/012026.
- [17] Chunyang Song, M. Wushouer and G.Tuerhong. Botnet Detection Based on Generative Adversarial Network and Efficient Lifelong Learning Algorithm, 2022 International Conference on big data, information and computer network (BDICN 2022), 2022, 1(1)48-54.
- [18] Mairidan Wushouer, Lin D., Ishida T., Murakami Y. In: Murakami Y., Lin D., Ishida T. (eds). A Constraint Approach to Lexicon Induction for Low-Resource Languages, Services Computing for Language Resources. Cognitive Technologies. (2018).
- [19] Mairidan Wushouer, Toru Ishida, Donghui Lin, and Katsutoshi Hirayama, Bilingual Dictionary Induction as an Optimization Problem, LREC 2014, pp. 2122-2129. (ISTP).
- [20] Y. Jin, G. Tuerhong and M. Wushouer, "Research on Information Fusion and Kalman Filter for Speech Enhancement," 2022 International Conference on Virtual Reality, Human-Computer Interaction and Artificial Intelligence (VRHCIAI), Changsha, China, 2022, pp. 207-211, doi:

10.1109/VRHCIAI57205.2022.00042.

[21] S. Mo, G. Tuerhong, M. Wushouer and T. Yibulayin, “PCAmix-based One Class Classification Ensemble Learning for Network Attack Detection,” 2021 International Conference on Computer Information Science and Artificial Intelligence (CISAI), Kunming, China, 2021, pp. 88-92, doi: 10.1109/CISAI54367.2021.00025.

[22] Guo, X., Wushouer, M. & Tuerhong, G. A Review of Research on Sentiment Analysis Algorithms Based on Multimodal Fusion. *Computer Engineering and Applications*, 1–21 [Online: 24 October 2023]. (Corresponding author)

[23] Liu, Q., Wushouer, M. & Tuerhong, G. Bi-Bi-Modality with Bi-Gated Fusion in Multimodal Sentiment Analysis. *Computer Engineering and Applications*, 1–10 [Online: 24 October 2023]. (Corresponding author)

Computer Engineering and Applications, 59(15): 1–16 (2023). (Corresponding author)[24] Zhang, J., Wushouer, M. & Tuerhong, G. Review of Speech Synthesis Methods under Low-resource Condition.

[25] Zeng, Q., Wushouer, M., Tuerhong, G. et al. Lifelong Few-Shot Topic Model Based on Improving Semantic Similarity. *Journal of Northeast Normal University (Natural Science Edition)*, 54(4): 71–76 (2022). DOI: 10.16163. Corresponding author.

[26] Wang, S., Wushouer, M., Tuerhong, G. et al. Continual Learning Method for Sentiment Classification Based on Knowledge Architecture. *Computer Engineering*, 49(2): 112–118 (2023). DOI: 10.19678. (Corresponding author)

[27] Zhang, D., Wushouer, M. & Tuerhong, G. One-Class Classification Method for High-Dimensional Mixed Imbalanced Credit Data. *Computer Engineering and Applications*, 57(10): 233–240 (2021). (Corresponding Author)

[28] Wang, S., Wushouer, M., Tuerhong, G. & Duan, S. Sentiment Classification Based on Lifelong Naive Bayes Method. *Journal of Chinese Information Processing*, 37(9): 150–160 (2023). (Corresponding Author)

[29] Jin, Y., Tuerhong, G. & Wushouer, M. Review of Multimodal Sensor Data Fusion in Sentiment Analysis. *Computer Engineering and Applications*, 1–18 [Online: 24 October 2023].

(Contributing author)

[30] He, X., Tuerhong, G., Wushouer, M. et al. Weibo Rumors Continuous Detection Model Combining BERT Word Embedding and BiLSTM. *Journal of Northeast Normal University (Natural Science Edition)*, 55(1): 65–71 (2023). DOI: 10.16163/j.cnki.dslkxb20210905001.

(Contributing author)

[31] Mo, S., Tuerhong, G. & Wushouer, M. Study on One-Class Classification Algorithms for High-Dimensional Mixed Intrusion Detection Data. *Computer Applications and Software*, 39(4): 300–310 (2022). (Contributing author)

[32] Lei, H., Tuerhong, G., Wushouer, M. et al. A Lifelong Machine Learning Topic Model Based on Hellinger Distance and Word Vectors. *Computer Engineering*, 48(11): 89–95 (2022). DOI: 10.19678/j.issn.1000-3428.0062694. (Contributing author)

[33] Wei, F., Tuerhong, G. & Wushouer, M. A Review of Generative Adversarial Networks and Their Applications. *Computer Engineering and Applications*, 57(19): 18–31 (2021). (Contributing author)

[34] Lei, H., Tuerhong, G., Wushouer, M. et al. Review of Novelty Detection. *Computer Engineering and Applications*, 57(5): 47–55 (2021). (Participating Author)

Research Projects Undertaken by Dr Wushouer as Principal Investigator or Participant

[1] *Research on the Development of In-demand Language Resources for Economic and Trade Cooperation under the Belt and Road Initiative*, funded by the National Language Commission, Jan 2025 – Jan 2027, with funding of RMB100,000; a provincial- and ministerial-level project, ongoing, with Dr Wushouer serving as Principal Investigator.

[2] *Research on Modelling Unit Discovery and Alignment Methods for Multilingual Speech Recognition Based on Information Decoupling*, funded by the National Natural Science Foundation of China Regional Science Fund Project, Jan 2025 – Dec 2027, with funding of RMB320,000; a national-level project, with Dr Wushouer serving as lead of the second participating institution and responsible for 25% of the funding.

[3] *Research on Methods for Building Similar-language Bilingual Lexicon Resources*, Project No. 2018D01C075, funded by the Natural Science Foundation of Xinjiang Uygur Autonomous Region, Jul 2018 – Jun 2021, with funding of RMB70,000; a provincial- and ministerial-level project, with Dr Wushouer serving as Principal Investigator.

[4] *Research on Technologies for the Automatic Construction of Bilingual Lexicons for Low-resource Languages*, Project No. XJEDU2017S006, funded by the Research Programme for Higher Education Institutions of Xinjiang Uygur Autonomous Region, Jan 2018 – Dec 2020, with funding of RMB50,000; a department-level project, with Dr Wushouer serving as Principal Investigator.

[5] *Research on Bilingual Lexicon Construction Technologies*, Project No. BS160240, funded by the Natural Science Foundation of Xinjiang University, Doctoral Start-up Fund, with funding of RMB50,000; a university-level project, with Dr Wushouer serving as Principal Investigator.

[6] *Tianchi Talent Project of Xinjiang Uygur Autonomous Region*, Project No. 40003006, Apr 2018 – Mar 2021, with funding of RMB400,000; a provincial- and ministerial-level talent project, with Dr Wushouer serving as Principal Investigator.

[7] *Development of a Knowledge Graph-based Question-and-Answer System for Pharmaceutical Marketing*, Project No. 202304140003, Mar 2023 – Jul 2023, with funding of RMB178,200; an industry-commissioned research project in collaboration with Sinopharm Group Xinjiang Xinte Pharmaceutical Co., Ltd., with Dr Wushouer serving as Project Lead.

[8] *Research on Key Technologies for Speech Recognition of Central and West Asian Languages under Resource-constrained Conditions*, Project No. 2020680012, funded by the National Natural Science Foundation of China Regional Science Fund Project, 21 Sep 2020 – 31 Dec 2024; a national-level project, ongoing, with Dr Wushouer serving as a participant, ranked second among project members.

[9] *Cross-lingual Weibo Topic Detection Based on Adversarial Neural Networks*, Project No. 2019 Z. 680007, funded by the National Natural Science Foundation of China Regional Science Fund Project, with funding of RMB360,000; a national-level project, with Dr Wushouer serving as a participant, ranked third among project members.

[10] *Research on Key Technologies for Online Public Opinion Analysis Based on Lifelong*

Learning, Project No. 202104120016, funded by the Natural Science Foundation of Xinjiang Uygur Autonomous Region, Jun 2021 – May 2024, with funding of RMB70,000; a provincial- and ministerial-level project, ongoing, with Dr Wushouer serving as a participant, ranked second among project members.

[11] *Research on Multivariate Control Charts Designed for High-dimensional Mixed Data*, Project No. 61021800032, funded by the Youth Research Project for Higher Education Institutions of Xinjiang Uygur Autonomous Region, Jan 2019 – Dec 2021, with funding of RMB50,000; a department-level project, ongoing, with Dr Wushouer serving as a participant, ranked second of five.

[12] *Research on Machine Learning-based Assistive Technologies for Medical and Health Diagnosis*, Project No. 04231200748, funded by the Dr Tianchi Project of Xinjiang Uygur Autonomous Region, Jan 2018 – Dec 2020, with funding of RMB70,000; a provincial- and ministerial-level talent project, completed, with Dr Wushouer serving as a participant, ranked second among project members.

Patent Application

[1] Wushouer, M., Tuerhong, G. & Wang, S. Lifelong Naive Bayes Text Classification Method Based on a Domain Attention Mechanism, Publication No. CN113051906A, 2021; first inventor.

[2] Two additional patent applications have been accepted; first inventor.

Books and Book Chapters

[1] *Intelligent Information Processing and Application by Dynamic Bayesian Network*, National Defense Industry Press, September 2019

[2] *Optimal Control Theory and Applications: Solution and Implementation Based on MATLAB*, Xi'an Jiaotong University Press, June 2023

Other Achievements

Software Copyrights:

- [1] Large-scale Image-Text Retrieval System Based on Locality-Sensitive Hashing *V1.0*, Registration No. 2022SR0044021; first contributor.
- [2] Speech Content Detection and Recognition Software for Complex Scenarios *V1.0*, Registration No. 2023SR0453769; first contributor.
- [3] Botnet Detection System Based on Lifelong Machine Learning *V1.0*, Registration No. 2022SR0239483; first contributor.
- [4] Speech Content Detection and Recognition Software for Complex Scenarios *V1.0*, Registration No. 2023SR0453769; first contributor.
- [5] Low-resource Emotional Speech Synthesis System Based on Knowledge Transfer *V1.0*, Registration No. 2023SR0459387; first contributor.
- [6] Xinzha Data Visualisation and Analysis System *V1.0*, Registration No. 2022SR0220174; first contributor.