

Ting Cai

Email: tingcai@cs.wisc.edu **Homepage:** pages.cs.wisc.edu/tingcai

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| Research interests | Artificial Generative Intelligence, Data Science, Machine Learning | |
| Education | University of Wisconsin-Madison | Madison, WI |
| | <i>Ph.D. in Computer Science</i> | 09/2021 – Present |
| | National University of Singapore | Singapore |
| | <i>Bachelor of Science in Data Science and Analytics</i> | 08/2016 – 06/2020 |
| Work experience | Data Science Intern at SPRIM Inc. | Singapore |
| | | 02/2020 - 05/2020 |
| | <ol style="list-style-type: none">1. Build and maintain online databases in MongoDB for food laws.2. Develop NLP applications for web-crawling and analyzing health regulations | |
| | Data Science Intern at Hewlett Packard Inc. | Singapore |
| | | 08/2018 - 12/2018 |
| | <ol style="list-style-type: none">1. Develop AI pipelines for customer feedback data, with a focus on anomaly detection and predictions2. Build a time series model on customer feedback data which can efficiently predict future patterns3. Build a real-time triggering system for manufacturing with interactive visualization | |
| | Data Science intern at Wish Inc. | Shanghai, China |
| | | 05/2018 - 08/2018 |
| | <ol style="list-style-type: none">1. Develop an NLP application in Python and SQL to detect similar merchants' semantic information2. Build a real-time web-scrawling system for world-wide trademarks | |
| Research experience | Research Assistant at UW-Madison | |
| | Advisor: Prof. AnHai Doan | 11/2023 - present |
| | <ol style="list-style-type: none">1. Explore business term association, e.g. string matching and entity matching, using pre-trained language models and active learning | |
| | Research Assistant at UW-Madison | |
| | Advisor: Prof. Kirthevasan Kandasamy | 07/2022 - 11/2023 |
| | <ol style="list-style-type: none">1. Work on machine learning focusing on active learning in the streaming setting2. Investigate multi-armed bandit with constraints3. Design stable mechanism for data sharing among competitive agents | |

Research Assistant at National University of Singapore

Advisor: Prof. [Vincent Y. F. Tan](#)

06/2020 – 08/2021

1. *Develop Nonnegative Matrix Factorization (NMF) with graph information*
2. *Explore NMF with adversarial training*

Publications

Constrained Best Arm Identification with Tests for Feasibility

Ting Cai, Kirthevasan Kandasamy

Under review

Active Cost-aware Labelling of Streaming Data

Ting Cai, Kirthevasan Kandasamy.

Proc. of 26th International Conference on Artificial Intelligence and Statistics (AISTATS), 2023

Transformer-based automated segmentation of recycling materials for semantic understanding in construction

Xin Wang, Wei Han, Sicheng Mo, **Ting Cai**, Yijing Gong, Yin Li, Zhenhua Zhu

Automation in Construction, Vol. 154, Oct 2023

Adversarially-Trained Nonnegative Matrix Factorization

Ting Cai, Vincent Y.F. Tan, Cédric Févotte

IEEE Signal Processing Letters, 2021+

Relevant Courses

Natural Language Processing, Machine Learning & Deep Learning
Introduction to Database Systems, Introduction to Big Data Systems
Introduction to Algorithms, Introduction to Operating Systems

TA experince

CS252 Introduction to Computer Engineering: Fall 21, Spring 22, Fall 22

CS354 Machine Organization and Programming: Summer 22

Awards & Honors

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| ACM SIGMOD Travel Award | 2023 |
| 1 st place in VIMS-IAARC Joint Datathon 2022 Competition | 07/2022 |
| Singapore government Science & Technology Scholarship | 2016-2020 |
| 1 st place in NUS Data Analysis Competition | 2018 |
| 2 nd prize in Chinese National Mathematics Competition | 2012 |

Skills

Python, C/C++, Java, SQL, Spark, Cassandra, Kafka, R