

Tiansheng Wen

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Homepage: <https://neilwen987.github.io/>

EDUCATION

Xidian University

M.S. in Information and Telecommunication Engineering

Xi'an, China

Sept. 2023 - present

Advisor : Prof. Bo Chen

Overall GPA: 3.8 / 4.0

Toefl: 99 (**Speaking:** 22)

Xidian University

Bachelor in Electronic Engineering

Xi'an, China

Sept. 2019 - Jul. 2023

Advisor : Prof. Bo Chen

Overall GPA: 3.8 / 4.0; **Rank:** 32/342

EXPERIENCE

Stony Brook University

NY, United States

Research Intern

Jul. 2024 - Oct. 2025

Advisor : Prof. Chenyu You

Research Focus: Sparsity, Adaptive Representation Learning, Uncertainty Estimation

ByteDance - BandAI

Beijing, China

Research Intern

Oct. 2025 - present

Research Focus: Agentic Reinforcement Learning in E-commerce

RESEARCH INTERESTS

My primary research goal is to develop **efficient, scalable, and reliable** methods for machine learning and generative AI, with a particular focus on sparsity, adaptive representation learning, and principled uncertainty estimation in foundation models—including LLMs, VLMs, and diffusion models. I am also interested in the memorization effects in foundation models, especially at the intersection of cognitive science and machine learning.

PUBLICATION(* EQUAL CONTRIBUTION)

9. Beyond Matryoshka: Revisiting Sparse Coding for Adaptive Representation

Tiansheng Wen*, Yifei Wang*, Zequn Zeng, Xinyang Liu, Bo Chen, Hongwei Liu, Stefanie Jegelka, Chenyu You

ICML 2025 (**Oral**) | Github repo 130+ stars | Sentence-Transformer v5.0

8. Scaling Attention via Feature Sparsity

Xie Yan*, Tiansheng Wen*, Bo Chen, Chenyu You, Stefanie Jegelka, Yifei Wang
ICLR 2026

7. CSRV2: Unlocking Ultra-Sparse Embeddings

Lixuan Guo*, Yifei Wang*, Tiansheng Wen*, Aosong Feng, Yifan Wang, Bo Chen, Stefanie Jegelka, Chenyu You
ICLR 2026

6. Same Budget, Adaptive Capacity: Rethinking Top-K Routing in Mixture-of-Experts

Tiansheng Wen*, Yifei Wang*, Bo Chen, Stefanie Jegelka, Chenyu You

ICML 2026 (under review)

5. No More K-means: Single-Stage Sparse Coding for Efficient Multi-Vector Retrieval

Lixuan Guo*, Yifei Wang*, Tiansheng Wen*, Stefanie Jegelka, Chenyu You

ICML 2026 (under review)

4. Contrastive Factor Analysis

Zhibin Duan*, Tiansheng Wen*, Yifei Wang, Chen Zhu, Bo Chen, Mingyuan Zhou

TPAMI (under review)

3. A Non-negative VAE: the Generalized Gamma Belief Network

Zhibin Duan, Tiansheng Wen, Muyao Wang, Bo Chen, Mingyuan Zhou

TPAMI (major revision)

2. Explaining Domain Shifts in Language: Concept erasing for Interpretable Image Classification

Zequn Zeng, Yudi Su, Jianqiao Sun, Tiansheng Wen, Hao Zhang, Zhengjue Wang, Bo Chen,

Hongwei Liu, Jiawei Ma

CVPR 2025

1. HICEScore: A Hierarchical Metric for Image Captioning Evaluation

Zequn Zeng, Jianqiao Sun, Hao Zhang, Tiansheng Wen, Yudi Su, Yan Xie, Zhengjue Wang, Bo Chen

ACM MM 2024

SERVICE

Journal Reviewer: TPAMI, JMLR, PR, TMI, TNNLS.

Conference Reviewer: NeurIPS, ICLR, CVPR, AAAI.

AWARDS & HONORS

- National Scholarship in Xidian University 2025
- First-Class Graduate Scholarship in Xidian University 2024
- Second-Class Undergraduate Scholarship in Xidian University 2021
- First-Class Undergraduate Scholarship in Xidian University 2020

TECHNICAL PROFICIENCIES

Programming Languages: Python, C/C++, MATLAB, HTML, etc.

Tools & Frameworks: PyTorch, vLLM, LLaMA-Factory, Git, Latex, Markdown, etc.

Language: Mandarin (Native speaker), English (Fluent).