Jiali Cui

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Education

Ph.D. in Computer Science, Stevens Institute of Technology, Hoboken, NJ — Expected May 2026
M.S. in Computer Science, Stevens Institute of Technology, Hoboken, NJ — May. 2021
B.S. in Computer Science, Harbin Institute of Technology, Harbin, China — May. 2019

Research Interest

- **Generative Model:** Diffusion Model, Energy-based Model, Latent Variable Generative Model.
- **Representation Learning:** Hierarchical Representation, Unsupervised and Self-supervised learning.

Experience

Research Intern @ Futurewei Technology June, 2025 - Aug, 2025

- Developed a novel generative framework for multimodal data that learns a shared latent representation across different modalities (e.g., image, audio, and text).
- Designed the framework to enable unconditional generation as well as cross-modal generation, addressing a central challenge in multimodal alignment and joint representation learning.
- Contributed to model formulation and experimental validation, achieving state-of-the-art multimodal consistency and interpretability within a unified probabilistic framework.
- Work is currently under review for AAAI 2026.

Research Intern @ Toyota Research Institute Sep, 2024 - Dec, 2024

- Proposed a probabilistic multimodal generative model that captures meaningful shared latent structures across heterogeneous data modalities and a novel cooperative learning scheme.
- Introduced a novel energy-based mechanism to improve latent and data contextual dependency modeling and enhance cross-modal coherence and sample diversity.
- Addressed core challenges in multimodal generative modeling and demonstrated the model's flexibility on large-scale benchmarks for representation learning and generation.
- Work is currently under review for ICLR 2026.

Publication

Cooperative Multimodal Energy-based Model with MCMC Revision
Jiali Cui (during internship at Futurewei Technology), Zhiqiang Lao & Heather Yu
Submitted to *International Conference on Learning Representations (ICLR)*.

Learning Multi-stage Energy-based Prior for Hierarchical Generative Models
Jiali Cui & Tian Han
Submitted to *IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI)*.

***ShaLa*: Multimodal *Sha*red *La*tent Generative Modelling**
Jiali Cui (during internship at Toyota Research Institute), Yanying Chen, Yanxia Zhang
Submitted to *Association for the Advancement of Artificial Intelligence (AAAI)*, 2026.

Learning Multimodal Latent Generative Models with Energy-Based Prior.
Shiyu Yuan*, Jiali Cui*, Hanao Li & Tian Han
The European Conference on Computer Vision (ECCV), 2024. **Oral**

Learning Latent Space Hierarchical EBM Diffusion Models
Jiali Cui & Tian Han
The International Conference on Machine Learning (ICML), 2024.

Learning Energy based Model via Dual MCMC Teaching

Jiali Cui & Tian Han
The 37th Conference on Neural Information Processing Systems (NeurIPS), 2023.

Learning Hierarchical Features with Joint Latent Space EBM Prior

Jiali Cui, Ying Nian Wu & Tian Han
The IEEE/CVF International Conference on Computer Vision (ICCV), 2023.

Learning Joint Latent Space EBM Prior Model for Multi layer Generator

Jiali Cu, Ying Nian Wu & Tian Han
The IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR), 2023.

Semi-supervised Learning by Latent Space EBM of Symbol-Vector Coupling

Bo Pang, Erik Nijkamp, Jiali Cui, Tian Han & Ying Nian Wu
Workshop on I Can't Believe It's Not Better (ICBINB) (@ *NeurIPS 2021*)

✔ Skill

- **Technical:** Python, PyTorch, TensorFlow.
- **Methodology:** Deep Learning, Machine Learning, Probabilistic Generative Modeling.

Professional Service

- Reviewer: ICCV, ECCV, ICML, NeurIPS, ICLR, AAAI, CVPR, IJCAI.
- Academic Mentor: Teach and lead projects for undergraduate and graduate students at Stevens Institute of Technology.

Miscellaneous

basketball, soccer, dog, cat, etc :)

Figure 1: My lovely dog (Youyou) and cat (Maodou).