Dennis Menn

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RESEARCH INTERESTS

Generative video and interactive world models, focusing on efficiency, real-time generation, and visual quality.

EDUCATION

Ph.D. in Electrical and Computer Engineering, University of Texas at Austin — Aug 2023 — Expected Aug 2027
Advisor: Prof. Diana Marculescu

M.S. in Electrical and Computer Engineering, National Taiwan University — Jul 2023
Advisor: Prof. Lin-shan Lee

B.S. in Electrical and Computer Engineering, National Taiwan University — Jun 2021

EXPERIENCE

Morpheus @ Roblox — Research Intern — May 2026 — Dec 2026
Mentors: Tianpei Gu and Xun Huang

- Built **MPEG-Diffusion** (under submission), high-quality mixed-resolution video generation for diffusion transformers, achieving 3.5× faster denoising while preserving visual quality.

Futurewei — Research Intern (Austin) — May 2025 — Aug 2025

- Developed **LIPAR** (NeurIPS 2026), training-free latent inter-frame pruning for video diffusion transformers: 1.53× throughput (19.3 FPS on an RTX 4090) and 20% less memory with no quality loss.

Energy-Aware Computing Lab, UT Austin — Graduate Research Assistant — Jan 2024 — Present

- Built **Streaming LIPAR** (real-time webcam video editing at 20 FPS on one RTX 4090) and a data-efficient artifact detector for diffusion-generated images.

PUBLICATIONS

- "Video Compression Meets Video Generation: Latent Inter-Frame Pruning with Attention Recovery." **Dennis Menn**, Yuedong Yang, Bokun Wang, Xiwen Wei, Mustafa Munir, Feng Liang, Radu Marculescu, Chenfeng Xu, Diana Marculescu. **NeurIPS 2026**.
- "Similarity Trajectories: Linking Sampling Process to Artifacts in Diffusion-Generated Images." **Dennis Menn**, Feng Liang, Hung-Yueh Chiang, Diana Marculescu. **WACV Workshops 2025**.
- "Synthesizing Artifact Dataset for Pixel-level Detection." **Dennis Menn**, Feng Liang, Diana Marculescu. Preprint, arXiv:2509.19589.
- "Investigating Human-Identifiable Features Hidden in Adversarial Perturbations." **Dennis Menn**, Tzu-hsun Feng, Sriram Vishwanath, Hung-yi Lee. Preprint, arXiv:2309.16878.
- "Paint and Relight: A Two-Stage Framework for Refining Neural Radiance Fields." **Dennis Menn**, Ta-che Hsiao. Manuscript.
- "Can GPT Models Detect Artifacts in Images?" **Dennis Menn**, Alexandros Dimakis, Diana Marculescu. Blog post.

INVITED TALKS

Streaming LIPAR: Training-Free Real-Time Video Editing — Daydream Scope Workshop (online) — Apr 2026

SKILLS

Languages: Python, C/C++, MATLAB, Shell · **Tools:** PyTorch, scikit-learn, OpenCV, SQL, HLS, Quartus, PSpice