

ALLEN TU

Ph.D. Student, Computer Science — University of Maryland

Research Focus: Scalable and Reliable Vision Systems (3D/4D Reconstruction, Biometrics, Generative Modeling)

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Google Scholar: [sqPGyG4AAAAJ](https://scholar.google.com/citations?user=sqPGyG4AAAAJ)

SELECTED PUBLICATIONS

1. Allen Tu, K. Narayan, J. Gleason, J. Xu, M. Meyn, and V. Patel, ‘TransFIRA: Transfer Learning for Face Image Recognizability Assessment’. *IEEE International Conference on Automatic Face and Gesture Recognition (FG)*, 2026.
2. A. Hanson, Allen Tu, G. Lin, V. Singla, M. Zwicker, and T. Goldstein, ‘Speedy-Splat: Fast 3D Gaussian Splatting with Sparse Pixels and Sparse Primitives’, in *Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR)*, 2025, pp. 21537–21546.
3. A. Hanson*, Allen Tu*, V. Singla, M. Jayawardhana, M. Zwicker, and T. Goldstein, ‘PUP 3D-GS: Principled Uncertainty Pruning for 3D Gaussian Splatting’, in *Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR)*, 2025, pp. 5949–5958.
4. Allen Tu*, H. Ying*, A. Hanson, Y. Lee, T. Goldstein, and M. Zwicker, ‘SpeeDe3DGS: Speedy Deformable 3D Gaussian Splatting with Temporal Pruning and Motion Grouping’. *Preprint*, 2025.
5. P. Asthana, A. Hanson, Allen Tu, T. Goldstein, M. Zwicker, and A. Varshney, ‘SplatSuRe: Selective Super-Resolution for Multi-view Consistent 3D Gaussian Splatting’. *Preprint*, 2025.

* denotes equal contribution.

EDUCATION

University of Maryland, College Park

Ph.D. in Computer Science

College Park, MD

January 2025 – May 2028 (Expected)

- Advised by Professor Tom Goldstein; collaborating with Matthias Zwicker, Vishal M. Patel, and Rama Chellappa

B.S./M.S. in Computer Science, Minor in Statistics

August 2019 – December 2022

RESEARCH EXPERIENCE

Systems & Technology Research

Computer Vision Research Intern

Arlington, VA

June 2022 – January 2026

- Introduced an explainable transfer-learning method for face image quality assessment (FIQA), enabling recognizability-aware probe filtering and weighted template aggregation for face and body recognition [1]
- Demonstrated state-of-the-art template-based recognition on the proprietary BRIAR surveillance benchmark, improving TAR from 0.43 to 0.87 at 1e-3 FMR using an encoder trained solely on public data [1]
- Developed multimodal biometric systems fusing face, body, and gait recognition for robust identification under severe conditions in the IARPA Biometric Recognition and Identification at Altitude and Range (BRIAR) program

University of Maryland Institute of Advanced Computer Studies

Graduate Research Assistant

College Park, MD

August 2023 – Present

- Introduced pruning, rasterization, and motion distillation methods that accelerate static and dynamic 3D Gaussian Splatting, producing representations with over 10× fewer primitives while preserving visual fidelity [2, 3, 4]
- Incorporated diffusion and super-resolution priors into 3D reconstruction pipelines to improve fidelity under sparse and low-resolution supervision regimes while mitigating artifacts and cross-view inconsistencies [5]
- Designed scalable 3D reconstruction pipelines deployed for unconstrained novel-view synthesis in real-world environments under the IARPA Walk-through Rendering from Images of Varying Altitude (WRIVA) program

SERVICE

Workshop Organization: SPAR-3D: Security, Privacy, and Adversarial Robustness in 3D Generative Vision Models, IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR), 2026.

Professional Memberships: Computer Vision Foundation (CVF); IEEE Biometrics Council