Allen Tu

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Education

University of Maryland, College Park — College Park, MD
Ph.D. in Computer Science — *January 2025 – May 2027 (Expected)*

- Advised by Professor Tom Goldstein
- Professional memberships: Computer Vision Foundation (CVF); IEEE Biometrics Council

M.S. in Computer Science — *August 2023 – December 2024*

B.S. in Computer Science, Minor in Statistics — *August 2019 – December 2022*

Research Experience

University of Maryland Institute of Advanced Computer Studies — College Park, MD
Graduate Research Assistant — *August 2023 – Present*

IARPA Walk-through Rendering from Images of Varying Altitude (WRIVA): Unconstrained 3D reconstruction and novel view synthesis in challenging real-world environments.

- Efficient rendering, compression, and training methods for 3D and 4D Gaussian Splatting (3DGS/4DGS) [2, 3]
- Diffusion-based priors, multi-view super-resolution, and uncertainty quantification for sparse-view reconstruction
- PIs: Professor Tom Goldstein, Professor Matthias Zwicker, Professor Abhinav Shrivastava, Dr. Abhay Yadav, Dr. Cheng Peng, Professor Rama Chellappa

Systems & Technology Research — Arlington, VA
Computer Vision Research Intern / Co-op — *June 2022 – January 2026*

IARPA Biometric Recognition and Identification at Altitude and Range (BRIAR): Multimodal, opportunistic fusion of incomplete face, body, and gait information in severe operational conditions.

- Transfer Learning for Face Image Recognizability Assessment (2025) [1]
- Learned Frame Feature Aggregation for Face Recognition with Low-Quality Video (2024)
- Operating Condition-Invariant Barlow Twins and Multimodal Ensembling (2023)
- Style-Based Appearance Flow for Clothing-Robust Body Representation Learning (2022)
- PIs: Dr. Joshua Gleason, Dr. Jennifer Xu, Dr. Soraya Stevens, Dr. Nathan Shnidman, Dr. Mark Keck, Professor Vishal Patel, Professor Rama Chellappa

Undergraduate Researcher — College Park, MD
University of Maryland Department of Computer Science — *January 2021 – December 2022*

Selected Publications

1. **Allen Tu**, J. Gleason, K. Narayan, J. Xu, M. Meyn, and V. Patel, 'TransFIRA: Transfer Learning for Face Image Recognizability Assessment'. *Accepted to the 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.

* denotes equal contribution.