

Tianwei Yin

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Google Scholar / GitHub

Education

2022-2025 **Ph.D. Student in Electrical Engineering and Computer Science, MIT**

- Advisor: Frédo Durand and Bill Freeman

2018-2022 **B.S. in Computer Science and Math, UT Austin**

- *Dean's Honored Graduate*

2015-2018 **Affiliated High School of South China Normal University**

Research Experience

2023-now **Research Collaboration, Adobe**

- Manager: Eli Shechtman.
- Accelerated Image / Video Generation.
- Multi-modal / Video foundation model.

2022-now **Research Assistant, MIT**

- Advisors: Frédo Durand and Bill Freeman.
- Visual Generative models. Distribution Matching Distillation (DMD) [1, 2] enhances the speed of diffusion model by two orders of magnitude. FastComposer [3] is among the first tuning-free method for customized diffusion-based image generation. Forward-Diffusion [4] merges physical forward models with probabilistic modeling, offering solutions to a wide array of inverse problems without direct signal measurements.

2019-2022 **Research Assistant, UT Austin**

- Advisor: Philipp Krähenbühl.
- 2D and 3D object detection for autonomous driving. CenterPoint [6] is one of the most influential CVPR papers according to here. It has been widely adopted across a multitude of 3D detection systems in both academic research and industry applications, with over 1600 citations to date. Led and contributed to two other projects that advanced the state-of-the-art in 2D tracking [5] and multi-modal 3D detection [7].

2019-2022 **Research Intern, Caltech**

- Advisors: Katie Bouman and Yisong Yue.

Selected Papers

- [1] Tianwei Yin, Michaël Gharbi, Taesung Park, Richard Zhang, Eli Shechtman, Frédo Durand, William T. Freeman, **Improved Distribution Matching Distillation for Fast Image Synthesis**, In NeurIPS 2024 (Oral), Project, Code
- [2] Tianwei Yin, Michaël Gharbi, Richard Zhang, Eli Shechtman, Frédo Durand, William T. Freeman, Taesung Park, **One-step Diffusion with Distribution Matching Distillation**, In CVPR 2024, Project

- [3] Guangxuan Xiao*, Tianwei Yin*, William T. Freeman, Frédo Durand, Song Han, **Fast-Composer: Tuning-Free Multi-Subject Image Generation with Localized Attention** (* equal contributions), IJCV, Code
- [4] Ayush Tewari*, Tianwei Yin*, George Cazenavette, Semon Rezhikov, Joshua B. Tenenbaum, Frédo Durand, William T. Freeman, Vincent Sitzmann, **Diffusion with Forward Models: Solving Stochastic Inverse Problems Without Direct Supervision** (* equal contributions), In NeurIPS 2023 (Spotlight), Project, Code
- [5] Xingyi Zhou, Tianwei Yin, Vladlen Koltun, and Philipp Krähenbühl, **Global Tracking Transformer**, In CVPR 2022, Code
- [6] Tianwei Yin, Xingyi Zhou, and Philipp Krähenbühl, **Center-based 3D Object Detection and Tracking**, In CVPR 2021, Project, Code
- [7] Tianwei Yin, Xingyi Zhou, and Philipp Krähenbühl, **Multimodal Virtual Point 3D Detection**, In NeurIPS 2021, Project, Code

Honors & Awards

- May 2022 **UT Computer Science Dean's Honored Graduate (top 2 in the graduating class)**
- Dec 2021 **CRA Outstanding Undergraduate Researcher Award Runner-up**
- Jun 2021 **UT Computer Science 2021 Best Honors Thesis Award**
- May 2021 **Huckin-Liedtke-Lupton Endowed Presidential Scholarship**
- Dec 2020 **Winner, NeurIPS 2020 NuScenes 3D Detection Challenge**
- Jun 2020 **Caltech Summer Undergraduate Research Fellowship**

Services

Conference Reviewer: CVPR, ICCV, ECCV, ICLR, NeurIPS, ICML, SIGGRAPH

Journal Reviewer: TPAMI, IJCV

Teaching Assistant: Neural Networks, Advanced Computational Photography