

SHIVAM DUGGAL

✉ shivamduggal.9507@gmail.com

🌐 [ShivamDuggal4](#) 🐦 [ShivamDuggal4](#) 📧 [Shivam Duggal](#) 🏠 [shivamduggal4.github.io](#)

RESEARCH INTEREST

My research interests lie at the intersection of computer vision, machine learning, and robotics. I am particularly interested in studying the interplay between compression and intelligence, and in using these intuitions to design more generally capable intelligent systems.

EDUCATION

Massachusetts Institute of Technology (MIT)

08/2023 – Present

Ph.D. in Electrical Engineering & Computer Science (EECS)

- CGPA: 4.7/5.0
- Awards: **Amazon AI PhD Fellowship**

Carnegie Mellon University (CMU)

08/2021 - 05/2023

Masters of Science in Robotics (MSR)

- CGPA: 4.12/4
- Awards: **Siebel Scholarship**

RESEARCH EXPERIENCE

Massachusetts Institute of Technology (MIT)

08/2023 - Present

Graduate Student Researcher

- Advised by Professors Bill Freeman, Antonio Torralba, Phillip Isola

Adobe Research

05/2026 - 08/2026

Research Intern

- Advised by Eli Shechtman, Richard Zhang

Amazon AWS AI

07/2025 - 12/2025

Research Intern

- Advised by Professor Stefano Soatto, Alessandro Achille

Google Research

06/2023 - 09/2023

Student Researcher / Research Intern

- Advised by Deqing Sun

Carnegie Mellon University

08/2021 - 05/2023

Graduate Student Researcher

- Advised by Professor Deepak Pathak

Uber Advanced Technology Group (ATG), Toronto

11/2019 - 02/2021

Research Scientist

- Advised by Professors Raquel Urtasun, Shenlong Wang

- Advised by Professors Raquel Urtasun, Shenlong Wang

AWARDS & HONORS

[* Denotes All India National Rank]

	<u>Amazon AI PhD Fellowship</u>	2026
	ICML Silver Reviewer Award	2026
	Stanford Graduate Fellowship (for 4 years)	(Declined) 2023
	<u>Siebel Scholarship (\$35000 USD)</u>	2023
Top 4.2%	Outstanding Reviewer ECCV	2022
Top 0.2%	<u>GeoSim nominated as Best Paper Candidate CVPR</u>	2021
Rank 1/70	Marketplace Hackathon, Amazon	2017
Rank 28*	<u>ACM ICPC India Finals</u>	2016

SELECTED PUBLICATIONS

[* Denotes equal contribution]

End-to-End Training for Unified Tokenization and Latent Denoising

Shivam Duggal*, Xingjian Bai*, Zongze Wu, Richard Zhang, Eli Shechtman, Antonio Torralba, Phillip Isola, William T. Freeman.
arXiv 2026 [\[paper link\]](#)

Single-pass Adaptive Image Tokenization for Minimum Program Search

Shivam Duggal, Sanghyun Byun, William T. Freeman, Antonio Torralba, Phillip Isola.
NeurIPS 2025 [\[paper link\]](#)

Adaptive Length Image Tokenization via Recurrent Allocation

Shivam Duggal, Phillip Isola, Antonio Torralba, William T. Freeman.
ICLR 2025 [\[paper link\]](#)

Your Diffusion Model is Secretly a Zero-Shot Classifier

Alexander Li, Mihir Prabhudesai, Shivam Duggal, Ellis Brown, Deepak Pathak.
ICCV 2023 [\[paper link\]](#)

Topologically-Aware Deformation Fields for Single-View 3D Reconstruction

Shivam Duggal, Deepak Pathak.
CVPR 2022 [\[paper link\]](#)

GeoSim: Realistic Video Simulation via Geometry-Aware Composition for Self-Driving

Yun Chen*, Frieda Rong*, Shivam Duggal*, Shenlong Wang, Xinchun Yan, Siva Manivasagam, Shangjie Xue, Ersin Yumer, Raquel Urtasun.
CVPR 2021 [\[paper link\]](#)

Nominated for Best Paper Award!

Deeppruner: Learning efficient stereo matching via differentiable patchmatch

Shivam Duggal, Shenlong Wang, Wei-Chiu Ma, Rui Hu, Raquel Urtasun.
ICCV 2019 [\[paper link\]](#)

Mentioned in Rick Szeliski's book on Computer Vision!

Online video summarization: Predicting future to better summarize present

*Shamit Lal**, *Shivam Duggal**, *Indu Sreedevi*.

WACV 2019 [\[paper link\]](#)

OTHER PUBLICATIONS

[* Denotes equal contribution]

Eval3D: Interpretable and Fine-grained Evaluation for 3D Generation

*Shivam Duggal**, *Yushi Hu**, *Oscar Michel*, *Aniruddha Kembhavi*, *William T. Freeman*,
Noah A. Smith, *Ranjay Krishna*, *Antonio Torralba*, *Ali Farhadi*, *Wei-Chiu Ma*

CVPR 2025 [\[paper link\]](#)

A Vision Check-up for Language Models

*Pratyusha Sharma**, *Tamar Rott Shaham**, *Manel Baradad*, *Stephanie Fu*, *Adrian RodriguezMunoz*, *Shivam Duggal*, *Phillip Isola*, *Antonio Torralba*.

CVPR 2024 [\[paper link\]](#)

Mending Neural Implicit Modeling for 3D Reconstruction in the Wild

*Shivam Duggal**, *Zihao Wang**, *Wei-Chiu Ma*, *Sivabalan Manivasagam*, *Justin Liang*, *Shenlong Wang*, *Raquel Urtasun*.

WACV 2022 [\[paper link\]](#)

NeuralODF: Learning Omnidirectional Distance Fields for 3D Shapes

Trevor Houchens, *Cheng-You Lu*, *Shivam Duggal*, *Rao Fu*, *Srinath Sridhar*.

arXiv 2022 [\[paper link\]](#)

PATENTS

Shivam Duggal, *Shenlong Wang*, *Wei-Chiu Ma*, *Raquel Urtasun*. “Depth Estimation for Autonomous Devices.” US Patent App. 16/826,924

Frieda Rong, *Yun Chen*, ***Shivam Duggal***, *Shenlong Wang*, *Xinchen Yan*, *Sivabalan Manivasagam*, *Ersin Yumer*, *Raquel Urtasun*. “Photorealistic Image Simulation with Geometry-Aware Composition.” US Patent App. 17/150,989

COURSE WORK

Machine Learning (A) / Kinematics, Dynamic & Control (A+) / Comp. Photography (A) / Physics-Based Rendering (A+) / Computer Vision (A+) / Convex Optimization (A) / Math for Robotics (A) / Robotic Manipulation (A) / TinyML & Efficient Deep Learning (A)