Anand Bhattad

NeurIPS 2023

Address	509 TTIC 6045 S Kenwood Ave Chicago, Illinois 60637, USA	Voice: (217) 904-5911 E-mail: anandbhattad92@gmail.com web: https://anandbhattad.github.io/		
EDUCATION	University of Illinois Urbana-Champaign (UIUC), USA			
	Ph.D., Computer Science Thesis: Exploring Knowledge in Generative Mode PhD Defense: May'23; Degree awarded: May'24 Thesis committee: David Forsyth (Advisor), Alyo	Jan'19 - May'24		
	Svetlana Lazebnik and Shenlong Wang			
	M.S., Computer Science M.S., Civil Engineering	Aug'17 - Dec'18 Aug'15 - Aug'17		
	National Institute of Technology Karnataka (NITK) Surathkal, India		
	B.Tech., Civil Engineering	July'11 - May'15		
RESEARCH EXPERIENCE	Toyota Technological Institute at Chicago, Ch Research Assistant Professor	icago Sept'23 - present		
	University of California Berkeley, Berkeley Visiting Scholar; Host: Alyosha Efros	Starting May'24		
	Allen Institute of Artificial Intelligence, Seattle Research Intern with Ani Kembhavi	e/Champaign(remote) Feb'23 - April'23		
	Intel ISL, Santa Clara/Champaign (remote) Research Intern with Stephan R. Richter in Vladlen	$Feb'21 - Aug'21 \\ Koltun's \ {\rm team}.$		
	NVIDIA ADLR, Santa Clara/Champaign (remote Research Intern with Andrew Tao and Bryan Catana	,		
	Fyusion Inc , San Francisco Research Intern with Abhishek Kar and Rodrigo Ort	iz Cayon May'19 - Aug'19		
	Siemens Corporate Technology, Princeton Computer Vision & DL Intern with Jan Ernst	May'17 - Aug'17		
	Computational Sensor Lab, Michigan State Univ Research Intern with Prof. Nizar Lajnef	rersity May'14 - July'14		
	Earthquake Engineering Research Center, IIII Research Intern with Prof. Ramacharla Pradeep Kun			
Conference Papers	 Shadows Don't Lie and Lines Can't Bend! Generative Models don't know Projective Geometryfor now A. Sarkar*, H. Mai*, A. Mahapatra*, S. Lazebnik, D.A. Forsyth, A. Bhattad CVPR 2024 			
	9. StyLitGAN: Image-based Relighting via Latent Control A. Bhattad, J. Soole, D. A. Forsyth CVPR 2024			
	8. StyleGAN Knows Normals, Depth, Albedd A. Bhattad, D. McKee, D. Hoiem, D. A. Forsyt NourIPS 2022	·		

- OBJect 3DIT: Language-guided 3D-aware Image Editing
 O. Michel, A. Bhattad, E. Vanderbilt, R. Krishna, A. Kembhavi, T. Gupta NeurIPS 2023
- 6. Improving Equivariance in State-of-the-Art Supervised Depth and Normal Predictors Yuanyi Zhong, A. Bhattad, Y. Wang, D. A. Forsyth ICCV 2023
- Cut-and-Paste Object Insertion by Enabling Deep Image Prior for Reshading A. Bhattad, D. A. Forsyth 3DV 2022 (Spotlight Presentation)
- 4. DIVeR: Real-time and Accurate Neural Radiance Fields with Deterministic Integration for Volume Rendering

L. Wu, J. Y. Lee, A. Bhattad, Y. Wang, D. A. Forsyth CVPR 2022 (Oral Presentation) (Best Paper Finalist)

- View Generalization for Single Image Textured 3D Models A. Bhattad, A. Dundar, G. Liu, A. Tao, B. Catanzaro CVPR 2021
- 2. Unrestricted Adversarial Perturbations via Semantic Manipulation
 A. Bhattad*, M. J. Chong*, K. Liang, B. Li, D. A. Forsyth
 (* for equal contribution)
 ICLR 2020
- 1. Improved Style Transfer with Calibrated Metrics
 M. Yeh*, S. Tang*, A. Bhattad, C. Zou, D. A. Forsyth
 WACV 2020

 (* for equal contribution)

Workshop Papers

3. MIMIC: Masked Image Modeling with Image Correspondences

K. Marathe, M. Bigverdi, N. A. Khan, T. Kundu, P. Howe, S. Ranjit, **A. Bhattad**, A. Kembhavi, L. Shapiro, R. Krishna CVPR-W 2024

- 2. Big but Imperceptible Adversarial Perturbations via Semantic Manipulation A. Bhattad*, M. J. Chong*, K. Liang, B. Li, D. A. Forsyth (* for equal contribution) CVPR-W 2019, *Oral Presentation*
- Detecting Anomalous Faces with "No Peeking" Autoencoders A. Bhattad, J. Rock, D. A. Forsyth CVPR-W, 2018, Oral Presentation

Under Review

4. Intrinsic LoRA: A Generalist Approach for Discovering Knowledge in Generative Models

X. Du, N. Kolkin, G. Shakhnarovich, A. Bhattad In Submission

3. Videoshop: Localized Semantic Video Editing with Noise-Extrapolated Diffusion Inversion

X. Fan, **A. Bhattad***, R. Krishna* In Submission

- 2. Intrinsic ControlNet: Zero-shot Object Compositing from Image Intrinsics Z. Zhang, F. Fortier-Chouinard, M. Garon, A. Bhattad, JF. Lalonde In Submission
- UrbanIR: Large-Scale Urban Scene Inverse Rendering from a Single Video Z. Lin, B. Liu, Y. Chen, D.A. Forsyth, J. Huang, A. Bhattad, S. Wang In Submission

TECHNICAL REPORTS

- 3. Blocks2World: Controlling Realistic Scenes with Editable Primitives V. Vavilala, S. Jain, R. Vasanth, A. Bhattad, D.A. Forsyth Technical Report, arXiv 2023
- Make It So: Steering StyleGAN for Any Image Inversion and Editing A. Bhattad, V. Shah, D. Hoiem, D. A. Forsyth Technical Report, arXiv 2023

 SIRfyN: Single Image Relighting from your Neighbors D. A. Forsyth, A. Bhattad, P. Asthana, Y. Zhong, Y. Wang Technical Report, arXiv 2021

STUDENTS MENTORING

Doctoral Students

- Xiao Zhang (University of Chicago; 2023-present) | Project on Latent Intrinsics
- Xiaodan Du (TTI-Chicago; 2023-present) | Paper Under Review (see UR#4)
- \bullet Xiang Fan (University of Washington; 2023-present) | Paper Under Review (see UR#3)
- Zitian Zhang (Université Laval; 2023-present) | Paper Under Review (see UR#2)
- Ayush Sarkar (UIUC; 2023-present) | Paper at CVPR (see CP#10)
- Kalyani Marathe (University of Washington; 2023-present) | Paper at CVPR-W (see WP#1)
- Zhi-Hao Lin (UIUC; 2023-present) | Paper Under Review (see UR#1)

Masters Students

- Hanlin (Asher) Mai (UIUC; 2023-present) | Paper at CVPR (see CP#10)
- Seemandhar Jain (UIUC; 2023-2024) | Project on Latent Intrinsics | Next: PhD Student at UCSD
- Frédéric Fortier-Chouinard (Université Laval; 2023-present) | Paper Under Review (see UR#2)
- James Soole (UIUC; 2023) | Paper at CVPR (see CP#9)
- Feiran Wang (UIUC; 2023) | Project on NeRF + Illumination Physics
- Kexuan (Klaus) Zou (UIUC; 2019-2020) | Next: Software Engineer at NVIDIA

Bachelors Students

- Joshua Ahn (University of Chicago; 2024-present) | Project on NeRF w/o Positional Encoding
- Amitabh Mahapatra (UIUC; 2023-present) | Paper at CVPR (see CP#10)
- Kuan-Sheng Chen (UIUC; 2023) | Project on Generative Models with Intrinsic Images
- Oscar Michel (AI2; 2023) | Paper at NeurIPS (see CP#7) | Next: PhD Student at NYU
- Liwen Wu (UIUC; 2022) | Paper at CVPR (see CP#4) | Next: PhD Student at UCSD
- Brian Chen (UIUC; 2020-2022) | REU at CMU's Robotics Institute
- Anchu Zhu (UIUC; 2018-2019) | Next: MS in CS at USC

TEACHING EXPERIENCE

Past Meets Present: A Tale of Two Visions, TTIC; Course Instructor Spring 2024

- Designed and developed a new course on Computer Vision, combining historical and modern approaches
- Taught a class of 20+ students from TTIC and UChicago, fostering an engaging learning environment

Computer Science, UIUC; Graduate Teaching Assistant

Jan 2016 – Dec 2018

- Applied Machine Learning (CS498 AML), Fall 2018
 - Designed and implemented Kaggle competitions to enhance student learning and engagement
- Data Structures (CS 225), Spring 2017
 - Developed assignments, exams, and labs to assess and reinforce student understanding
- Introduction to Computing (CS 101), Spring 2016 & Fall 2016
 - Recognized as an Excellent TA for effective teaching and student support

Invited Talks

What do Generative Image Models Know?

• IIIT Hyderabad, India; Vision Seminar	Jan 2024
• TTI-Chicago; Research@TTIC	Oct 2023
• Exactech, Inc.; Tech Talk	Oct 2023

Exploring Knowledge in Generative Models

• Stanford University in Jiajun Wu's group	June 2023
• University of Tubingen, Autonomous Vision Group	May 2023

What do Generative Models know about Geometry and Illumination?

• UC Berkeley: Vision Seminar	Apr 2023
• NVIDIA Research	Apr 2023
• MIT: Vision and Graphics Seminar	Apr 2023
• CMU: VASC Seminar	Mar 2023

• UW: Vision Seminar Mar 2023

Learning about Light without Labeled Data

• UMD: Vision Seminar	Mar 2023
• UCSD: Pixel Cafe Seminar	Feb 2023
• TTIC: Research Talk	Feb 2023

SERVICES & LEADERSHIP

Lead Organizer, ECCV-W on "Knowledge in Generative Models"Sept 2024Lead Organizer, CVPR-W on "CV 20/20: A Retrospective Vision"June 2024Lead Organizer, CVPR-W on "Scholars & Big Models: How Can Academics Adapt?"June 2023Lead Organizer, UIUC Vision Workshop at AllertonApril 2023Organizer, UIUC External Speaker Series and Vision LunchJan 2021 - May 2023Reviewer, Computer Vision ConferencesNov 2018 - Present

- Serving as reviewer for CVPR, NeurIPS, ECCV and ICCV conferences and workshops.
- Outstanding Reviewer for ICCV 2023
- Outstanding Emergency Reviewer for CVPR 2021

Program Committee

Jun 2019

- Adversarial Machine Learning in Real-World Computer Vision Systems, CVPR 2019 Workshop
- Security and Privacy in Machine Learning, ICML 2019 Workshop

Organizer, Vision Coffee, Urbana-Champaign

May'18 - Aug'18

- Vision and Deep Learning paper/topic weekly discussion group
- Finalized agenda/topic, location and initiated discussions

Co-Founder, SchoolEngg

Apr'13 - May'15

- Forum for high-school students; providing firsthand knowledge of all engineering disciplines
- Currently, renamed as *PrepLift*, an education counselling start-up in India