

Mahesh Bhosale

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Homepage

LinkedIn

Github

Research Interest

Image/Video synthesis, Diffusion Model Hallucinations, Multi-Modal Large Language Models (MLLMs).

Education

State University of New York at Buffalo, Buffalo, NY, USA

Sept 2023 – May 2026 (Expected)

PhD in Computer Science

- Advisor: [Dr. David Doermann](#)
- Google CS Research Mentorship Scholar 2023.

State University of New York at Buffalo, Buffalo, NY, USA

Sept 2021 – May 2023

MS by Research in Computer Science

- Advisor: [Dr. David Doermann](#)
- Projects: Person Re-identification in Videos.

Walchand College of Engineering, Shivaji University, Sangli, India

June 2013 – May 2017

BS in Information Technology

Experience

Research Assistant and Lab Manager

May 2022 – Present

[Institute of Artificial Intelligence and Data Science, University at Buffalo, Buffalo, NY, USA](#)

- Research Topics: Medical Image Synthesis, Diffusion Hallucinations, MLLMs.

Software Engineer

Aug 2017 – Aug 2021

[Veritas Technologies LLC, Pune, India](#)

- Advisor: [Anindya Banerjee](#). Developed a novel scheduling algorithm on top of LSTM storage and compute resource prediction. Reducing execution time of resource intensive tasks by 56%. Bench-marked other Deep learning based sequence modeling solutions. Bestowed Certificate of Merit Veritas Illuminate 2020.

Software Engineer Intern

Jan 2017 – June 2017

[Veritas Technologies LLC, Pune, India](#)

- Reduced execution time of variants of the 'ls' command by 20% using directory inode read ahead algorithm.

Publications

[Google Scholar](#)

- ICCV 2025** [Mahesh Bhosale](#), Abdul Wasi, Yuanhao Zhai, Yunjie Tian, Samuel Border, Nan Xi, Pinaki Sarder, Junsong Yuan, David Doermann, Xuan Gong, PathDiff: Histopathology Image Synthesis with Unpaired Text and Mask Conditions, in International Conference on Computer Vision, 2025. [\[Paper\]](#) [\[Code\]](#)
- NeurIPS 2025** Chau Pham, Quan Dao, [Mahesh Bhosale](#), Yunjie Tian, Dimitris N. Metaxas, David Doermann, AutoEdit: Automatic Hyperparameter Tuning for Image Editing. [\[Paper\]](#)
- Under Review at ICLR 2026** [Mahesh Bhosale*](#), Naresh Kumar Devulapalli*, Abdul Wasi, Chau Pham, Vishnu Lokhande, David Doermann, Variance-Guided Score Regularization for Hallucination Mitigation.
- ICDAR 2024** Pengyu Yan, [Mahesh Bhosale](#), Jay Lal, Bikhyat Adhikari, and David Doermann, ChartReformer: Natural Language-Driven Chart Image Editing, in International Conference on Document Analysis and Recognition, 2024. [\[Paper\]](#) [\[Code\]](#)
- ICDAR 2023** Jay Lal, [Mahesh Bhosale*](#), Aditya Mitkari*, and David Doermann, LineFormer: Rethinking Line Chart Data Extraction as Instance Segmentation, in International Conference on Document Analysis and Recognition, 2023. [\[Paper\]](#) [\[Code\]](#)

arXiv 2023 **Mahesh Bhosale***, Abhishek Kumar*, and David Doermann, Player Re-Identification Using Body Part Appearances, arXiv 2023. [[Paper](#)] [[Code](#)]

Professional Services

Teaching Assistant

CSE 573 Computer Vision and Image Processing, Fall 2025
CSE 574 Introduction to Machine Learning, Spring 2024, Fall 2024, Spring 2025
CSE 702 Automated Analysis of Sporting Event Videos, Summer 2022
CSE 521 Introduction to Operating Systems, Spring 2022, Fall 2022, Fall 2023

Conference Reviewer

IEEE International Conference on Computer Vision (ICCV) 2025
Neural Information Processing Systems (NeurIPS) 2025
International Conference on Learning Representations (ICLR) 2025

Honors and Awards

Research Mentorship Scholar , Google, USA (remote)	2023
Certificate of Merit , Illuminate Annual Technical Conference, Veritas Technologies LLC, Pune, India	2020
Silver Medal , World Code Sprint, Hacker-rank	2016
Honorable Mention , ACM-ICPC Amritapuri Regional, Amrita University, Coimbatore, India	2015
Runner Up (out of 75 teams), Best Project Competition, Department of IT, WCE, Sangli, India	2015
Runner Up (600 participants), Coding Competition, MindSpark, College of Engineering, Pune, India	2014
DST Inspire Science Camp (Top 1%), Government of India and IIIT, Pune, India	2014

Technical Skills

C, C++, Python, R, Pytorch, ROS