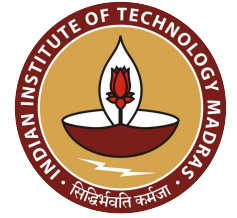


# Gopi Raju Matta | EE17D021

Indian Institute of Technology Madras (India)

<https://www.linkedin.com/in/gopi-raj-matta-1b5347105/>

<https://github.com/GopiRajuMatta>



## Education

Program	Institution/Board	%/CGPA	Year
<i>PhD</i> (EE)	Indian Institute of Technology, Madras	<b>9.0/10</b>	2017-25
<i>MTech</i> (ETC)	IEST, Shibpur	<b>84.4%</b>	2015-17
<i>BTech</i> (ECE)	RGUKT, IIIT Nuzvid	<b>9.3/10</b>	2011-15
<i>Pre University Course</i> (MBiPC)	RGUKT, IIIT Nuzvid	<b>9.52/10</b>	2011
<i>Secondary School Certificate</i>	SVNA High School, Chatragadda	<b>93.3%</b>	2009

## Research Projects

- High Dynamic Range (HDR) 3D reconstruction of dynamic scenes*** Jun 2024 - Ongoing  
(PhD / Guide: Prof. Kaushik Mitra ) IIT Madras
  - Working on reconstructing 3D HDR scene from a set of multiple 2D images of dynamic scene using Deep Learning and Gaussian Splatting
- Depth-guided Neural Transformers for Novel View Synthesis*** May 2024 - Ongoing  
(PhD / Guide: Prof. Kaushik Mitra ) IIT Madras
  - Working on depth-based fine/accurate sampling of neural radiance fields for real-time rendering
- 3D Gaussian Splatting for Flare Removal*** June 2024 - Ongoing  
(PhD / Guide: Prof. Kaushik Mitra ) IIT Madras
  - Working on removing flare from multi-view(3D) images using real-time rendering novel view synthesis technique 3D gaussian splatting
- BeSplat – Gaussian Splatting from a Single Blurry Image and Event Stream*** Sept 2024 - Dec 2024  
(PhD / Guide: Prof. Kaushik Mitra ) IIT Madras
  - Developed BeSplat, a method that recovers sharp radiance fields from a motion-blurred image and event stream using 3D Gaussian Splatting and Bezier SE(3) formulation, enabling view-consistent image rendering and effective camera motion recovery
- Generalizable Neural Radiance Fields for Flare Removal*** May 2023 - May 2024  
(PhD / Guide: Prof. Kaushik Mitra ) IIT Madras
  - Worked on flare removal from multi-view(3D) images using generalizable neural radiance fields
  - Contributed Flare3D dataset Flare pattern dataset with flare mask annotations
- Odometry from Novel SPC cameras for high-speed Robot Navigation*** May 2022 - May 2023  
(PhD / Guide: Prof. Kaushik Mitra ) IIT Madras
  - Worked on odometry estimation from novel single photon binary frames(100k fps) for high-speed navigation applications
- Night-time Video Dehazing*** March 2021 - May 2022  
(PhD / Guide: Prof. Kaushik Mitra ) IIT Madras
  - Contributed a supervised dataset using GTA-5 to simulate nighttime fog and explored SOTA deep learning models to remove fog and improve nighttime image visibility.
- Towards Realistic Underwater Dataset Generation and Color Restoration*** March 2021 - May 2022  
(PhD / Guide: Prof. Kaushik Mitra ) IIT Madras
  - Worked on color restoration of underwater images by contributing synthetic supervised dataset using multimodal domain adaptation technique

8. **Underwater 3-D Scene Reconstruction Using Event Sensor & Laser Projector** July 2018 - March 2021  
(PhD / Guide: Prof. Kaushik Mitra ) IIT Madras
  - Worked on reconstruction 3D structure of underwater objects using structured light system: laser scanning projector & event camera
9. **Image Registration methods Applicable to Super-Resolution Analysis** July 2016 - March 2017  
(MTech / Guide: Prof. Ayan Banerjee ) IIST Shibpur
  - Worked on different image registration methods for MRI images.
10. **Effective 4G Communication using OFDM** July 2014 - March 2015  
(BTech / Guide: Dr. Rama Krishna Muni ) RGUKT IIIT Nuzvid
  - Worked on OFDM algorithm to develop 4G communication system using MATLAB.

## Publications

- Matta, G. R., Reddypalli, T., & Mitra, K. (2025). *BeSplat – Gaussian Splatting from a Single Blurry Image and Event Stream*. In *1st Workshop on EVGEN: Event-based Vision in the Era of Generative - Transforming Perception and Visual Innovation (EVGEN 2025)*, part of WACV 2025 Conference. Retrieved from <https://eventbasedvision.github.io/EVGEN2025/>
- Matta, G. R., Siddartha, R., Girish, R. S. V., Sharma, S., & Mitra, K. (2024). *GN-FR: Generalizable Neural Radiance Fields for Flare Removal*. In *35th British Machine Vision Conference 2024 (BMVC 2024)*, Glasgow, UK, November 25–28, 2024. BMVA. Retrieved from [https://bmva-archive.org.uk/bmvc/2024/papers/Paper\\_659/paper.pdf](https://bmva-archive.org.uk/bmvc/2024/papers/Paper_659/paper.pdf)
- Jain, N., Matta, G. R., & Mitra, K. (2022, December). *Towards Realistic Underwater Dataset Generation and Color Restoration*. In *Proceedings of the Thirteenth Indian Conference on Computer Vision, Graphics and Image Processing* (pp. 1–9). Retrieved from <https://dl.acm.org/doi/pdf/10.1145/3571600.3571630>

## Industrial Training

1. **Behavioral Modeling of 1Gbps Receiver** May 2016 - July 2016  
(M.Tech / Mentor: Mr. Krishna Mahesh Karanam) Texas Instruments India, Bangalore
  - Developed a behavioral model using Verilog-A on Cadence for a 1Gbps receiver, optimizing channel equalization with CTLE to transmit 1.25Gbps data through coaxial cable and achieved 50ps jitter.

## Course Work

1. **Key Courses** August 2018-April 2019  
(Core and electives) IIT Madras
  - Course: Advanced Topics in Signal Processing(Deep Learning), Pattern Recognition(Machine Learning), Photometry & Geometry in Computer Vision, Convex Optimization, Image Signal Processing, Applied Linear Algebra

## Technical Skills

- Programming Languages: Python, MATLAB, C, C++, CUDA
- Operating Systems: Windows, Linux, ROS
- ML Frameworks: PyTorch, TensorFlow, Keras
- Tools: Docker, Blender, Microsoft Office

## Positions of Responsibility

- **Faculty** at Learning Room for CBSE X, XI maths (2023-).
- **Teaching Assistant** for Computational Photography course, EE Department, IIT Madras (Jan-May, 2022).
- **Teaching Assistant** for Probability Foundations for Electrical Engineers, EE Department, IIT Madras (July-Dec, 2021).
- **Teaching Assistant** for Computational Photography course, EE Department, IIT Madras (Jan-May, 2021).
- **Teaching Assistant** for Modern Computer Vision course, EE Department, IIT Madras (July-Dec, 2020).
- **Teaching Assistant** for Signals and Systems course, EE Department, IIT Madras (Jan-May, 2019).
- **Teaching Assistant** for Data Analytics Laboratory course, EE Department, IIT Madras (July-Dec, 2018 & 19).
- **Teaching Assistant** for Digital Signal Processing course, EE Department, IIT Madras (Jan-May, 2018).

## Workshops

- 3D Vision Summer School (3DVSS), 2017 organized by IIIT Hyderabad.

## Achievements/Awards

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- Successfully qualified *JRF-NET* (2014).
- Secured 1352 rank in GATE-16 and 3600 rank in GATE-15 in ECE.
- Got selected for 6-year integrated Program instituted by AP Government for gifted Rural Youth.
- Our Exploratory Research Project proposal titled Wide Field-of-view and Dense 3D Reconstruction of Underwater Archeological Sites got approved for funding from ICSR, one of the 29 proposals for the year 2018-2019.
- Stood class 1st in B.Tech in Electronics & Communication Engineering.
- Stood overall 2nd in M.Tech in Electronics and Telecommunicatin Engineering.
- Secured 1152 rank in AP polytechnic exam - 2009.
- Stood class 1st in SSC examination.

## Others

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- Hobbies: Prayer, Playing Guitar, Learning languages
- Languages: English, Hindi, Bengali, Tamil, German.

## Declaration

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I do hereby declare that all the details furnished above are true to the best of my knowledge and belief.

Place: Chennai, Tamil Nadu (India)

(Gopi Raju Matta)

Date: 18th Dec, 2024