Mars Rover Manipal (2025-2026)**:**

Conference Proceedings

1. Bhatt et al. **Hybrid MAC Protocol with Integrated Multi-Layered Security for Resource-Constrained UAV Swarm Communications**. Accepted at 13th International Conference on Intelligent Systems and Embedded Design 2025
   Pre-print: https://arxiv.org/abs/2510.10236

2. Bhatt et al. **Dynamic Hybrid Resource Utilization and MCS-based Intelligent Layering**, Accepted at COMSNETS 2026 (A). Pre-print: https://arxiv.org/pdf/2511.08383

3. Aravinthakshan et al. (2025). **LaFINet: Laplacian-Based Frequency Injection Network for Camouflage Object Detection.** Accepted at AAAI 2026 Student Abstract. (A*)
   https://ojs.aaai.org/index.php/AAAI/article/view/42179

4. Aravinthakshan et al. (2025). **LaFINet: Laplacian-Based Frequency Injection Network for Camouflage Object Detection.** Extended version Accepted at AAAI 2026 Community Workshop (A*)

5. Hiren, et al. 2025. **One to Three-Day Ahead Streamflow Forecasting Using Multi-Head Attention with LSTM.** Accepted at the *AGU 2025 Conference*. (A*)

6. Bhatt et al. **Adaptive Entanglement-Aware Routing for Satellite Quantum Networks under Orbital and Atmospheric Variability**. Accepted at IEEE ANTS QCOMNET 2025 workshop. Pre-print: https://arxiv.org/pdf/2511.05228

7. Aravinthakshan et al. (2025). **PFedMa: Pruned Federated Matched Averaging,** submitted to AAAI Workshop on Critical Federated Learning (A*)

8. Bhaghyesh et al**. (2025) TopoReformer: Topological Feature-based Adversarial Attack Mitigation in OCR Models** Accepted AAAI 2026

9. Kurup et al. **(2025) SG-SAFE: Secure and Fast Failover via SDN for Smart Grids.** Accepted at CMPA 2025.

10. Bhatt et al.(2026) **Resilient Chaotic Cross-Layer Routing for Smart Grid IoT Networks**. Accepted at the International Conference on Secure Cyber Computing and Communications. Pre-print: https://arxiv.org/pdf/2603.02105

11. Gakhar et al. (2026) **LEMMA: Laplacian Pyramids for Efficient Marine Semantic Segmentation**. Pre-print: https://arxiv.org/abs/2603.25689

12. Bhatt et al. (2026) **Behaviour-aware Hybrid Architecture for Trust-driven Transmissions**. Accepted at IEEE SPACE. Preprint: https://arxiv.org/pdf/2604.25201
13. Bhatt et al. (2026) **SNF-PRP: A Covert Integrating Sensing and Communications Framework.** Accepted at the International Conference on Signal Processing and Communications 2026. Pre print: https://arxiv.org/pdf/2606.03960
14. Bhatt et al. (2026) **Entropy-Adaptive Multi-Map Chaotic Modulation for Physical-Layer Security**. Accepted at IEEE International Conference on Instrumentation.
15. Bhatt et al. (2026) **Adaptive QC-LDPC Decoder with Symbolic ROM, HARQ-Integrated Soft Combining, and Energy-Aware Layered Processing**. Accepted at IEEE International Conference on Instrumentation.
16. Bhatt et al. (2026) **ZC-MMV-AMP: Deterministic Pilot-Integrated Sparse Recovery for Grant-Free Massive IoT Access in Beyond-5G Networks**. Accepted at IEEE International Conference on Instrumentation.

Journal Publications

17. Hiren, et al. 2025. **One to Three-Day Ahead Streamflow Forecasting Using Multi-Head Attention with LSTM**. Under review in the *EGU Journal of Hydrology and Earth System Sciences*. (Q1)

18. **Laplacian reconstructive network for guided thermal super-resolution** accepted to Scientific Reports, accepted to Nature Portfolio (Q1). https://www.nature.com/articles/s41598-026-36027-x

Mars Rover Manipal (2024-2025)**:**

Conference Proceedings

1. Bhatt et al. **Enhanced V2X Communication Using Game-Theory Based Adaptive MAC Protocols**. Accepted at 16th INTERNATIONAL IEEE CONFERENCE ON COMPUTING, COMMUNICATION AND NETWORKING TECHNOLOGIES (ICCCNT). Preprint: https://arxiv.org/abs/2506.09817

2. Gakhar et al. **Fourier Domain Adaptation for Traffic Light Detection in Adverse Weather**. *Accepted at the 2COOOL workshop, ICCV 2025. (A*).* Preprint: https://arxiv.org/html/2411.07901v1

3. Gakhar et al. **LEMMA: Laplacian pyramids for Efficient Marine SeMAntic Segmentation.** *Under review at WACV 2026 (A)*.

4. Naidu et al. **DEAL-YOLO: Drone Efficient Animal Localization using YOLO.** *Accepted at ICLR Workshops 2025. (A*)*. Extended work under review at Nature Scientific Report at Nature Portfolio Journal.
Preprint: https://arxiv.org/abs/2503.04698

5. Didwania et al. **LapLoss**: Laplacian Pyramid-based Multiscale loss for Image Translation. *Accepted at ICLR Workshops 2025. (A*)*. Extended work under review at Nature Scientific Report at Nature Portfolio Journal.
Preprint: https://www.arxiv.org/abs/2503.05974

6. Rathore et al. **HipyrNet**: Hypernet-Guided Feature Pyramid network for mixed-exposure correction. *Accepted at the 4th Workshop of Image/Vision/Audio in Computer Vision and Generative AI, WACV 2025. (A)*
Preprint: https://arxiv.org/abs/2501.05195

7. I. Gakhar, S. Rajesh, R. Shorey, R. Verma. Unveiling the Trade-offs: A Parameter-Centric Comparison of Synchronous and Asynchronous Federated Learning. *Accepted as a poster paper at COMSNETS-2025.* Paper: https://ieeexplore.ieee.org/abstract/document/10885640

8. Rao et al. **Robust Fault Detection** System for Batteries in Renewable Energy Systems. *Accepted at the 9th International Conference on Green Energy and Applications, 2025.* Preprint: https://www.authorea.com/users/886795/articles/1264803-robust-fault-detection-system-for-batteries-in-renewable-energy-storage-systems

9. Bhatt et al. **Weather-Driven Priority** Charging for Battery Storage Systems in Hybrid Renewable Energy Grids. *Accepted at the 9th International Conference on Green Energy and Applications, 2025.* Preprint: https://arxiv.org/abs/2501.06104

10. Shenoy et al. **HiPyr**: Harnessing HyperNetworks for Optimal Kernel Prediction in Laplacian Translation Networks for Contrast Enhancement. *Accepted at the Technical Symposium at ACM SIGCSE 2024.*

11. L. Srivastava, I. Gakhar. **LAqua**: Laplacian Pyramids for Aquatic Segmentation. *Accepted as a Student Abstract at the 38th Annual AAAI Conference on Artificial Intelligence, 2025. (A*)*

12. Didwania et al. **HYDRA-FL**: HyperNet-Driven Aggregation for Resilient Federated Learning in a Band Heterogeneous Environment. *Under review at the FedVision Workshop, CVPR 2025. (A*)*

13. Manoj. R et al. (2025). AdaptPhishSysNet: Adaptive Phishing Detection System for Blockchains Using Machine Learning. In: Iglesias, A., Shin, J., Patel, B., Joshi, A. (eds) Information Systems for Intelligent Systems. ISBM 2024. Lecture Notes in Networks and Systems, vol 1255. Springer, Singapore. https://doi.org/10.1007/978-981-96-1747-0_32

Journal Publications

14. Kasliwal et al. **LapGSR**: Laplacian Reconstructive Network for Guided Super Resolution. *Under Review at Nature Scientific Report. (Q1)*
Preprint: https://arxiv.org/abs/2411.07750

15. Naidu, A. P., et al. 2021. DEAL-YOLO: Drone-based Efficient Animal Localization using YOLO. Submitted to *Journal of Science Technology and Research (JSTAR)*.

Mars Rover Manipal (2023-2024)**:**

Conference Proceedings

1. K. Didwania, P. Seth, A. Kasliwal, A. Agarwal. **AgriLLM**: Harnessing Transformers for Farmer Queries. *Accepted at the undergraduate track of International Conference on Knowledge Discovery and Data Mining*
Preprint Link: https://arxiv.org/pdf/2407.04721

2. K. Didwania, D. Toshniwal, and A. Agarwal, "**Unveiling Themes in Judicial Proceedings: A Cross-Country Study Using Topic Modeling on Legal Documents**

from India and the UK," In Proceedings of. KM4LAW Workshop at FOIS Conf., August 2024.
Preprint Link: https://arxiv.org/abs/2406.0004

3. Anupam Borthakur , Asim Manna , Aditya Kasliwal , et al. **FedERA**: Framework for Federated Learning with Diversified Edge Resource Allocation. TechRxiv. September 27, 2023.
DOI: 10.36227/techrxiv.24173898.v1

4. Sagaram et. al, 2024, "**SolarPanel Segmentation**: Self-Supervised Learning for Imperfect Datasets". *In Proceedings of the Tiny Papers track at the International Conference for Learning Representations 2024 (ICLR-2024)*
Preprint Link: https://arxiv.org/abs/2402.12843

5. Kasliwal et. al. 2023, "**Sailing through Spectra**: Unveiling the potential of Multi-Spectral Information in Marine Debris Segmentation". *In Proceedings of the Tiny Papers track at the International Conference for Learning Representations 2024 (ICLR-2024)*
Link: https://openreview.net/pdf?id=tJPLJS97X4

6. Kasliwal et. al, 2023, "**LaMAR**: Laplacian Pyramid for Multimodal Adaptive Super Resolution (Student Abstract)". *In Proceedings of the 38th Annual AAAI Conference on Artificial Intelligence (AAAI-2024)*
Link: https://ojs.aaai.org/index.php/AAAI/article/view/30463

7. Kasliwal et. al. 2023, "**ReFuSeg**: Regularized Multi-Modal Fusion for Precise Brain Tumour Segmentation". *In Proceedings of the 9th edition of the Brain Lesion (BrainLes) Workshop, Medical Image Computing and Computer Assisted Intervention, 2023*
Preprint Link: https://arxiv.org/abs/2308.13883

8. A. Kasliwal, I. Gakhar, A. Kamani 2023, "**CoReGAN**: Contrastive Regularized Generative Adversarial Network for Guided Depth Map Super Resolution."
In Proceedings of Generative AI Workshop at the 3rd International Conference on AI-ML Systems, 2023.
Link: https://dl.acm.org/doi/10.1145/3639856.3639897

9. A. Borthakur, A. Kasliwal, D. Sheet 2023, "**Fed2Tier**: A Two-Tier Federated Learning System Towards Green Computation." *Demo at the 3rd International Conference on AI-ML Systems, 2023.*
   Link: https://dl.acm.org/doi/10.1145/3639856.3639909

Journal Publications

10. Kappagantula, S., Vojjala, S., Iyer, A. A., Velidi, G., Emani, S., & Vandrangi, S. K. (2023). "**HEURISTIC OPTIMIZATION** OF BAT ALGORITHM FOR HETEROGENEOUS SWARMS USING PERCEPTION." Operational Research in Engineering Sciences: Theory and Applications, 6(2).
    Link: Paper Link

Previous years:

1. Sharma, A., Bhatt, H. Increasing Physical Layer Security Through Hyperchaos in VLC Systems. *SN COMPUT. SCI.* 4, 155 (2023). Springer SN Computer Science
   Link- https://link.springer.com/article/10.1007/s42979-022-01552-9

2. Mehta, D., Sharma, A., & Ravichandran, R. (2023). A Review on Robotic Swarm Optimization Techniques.
   https://www.techrxiv.org/articles/preprint/A_Review_on_Robotic_Swarm_Optimization_Techniques/23675199

3. Kasliwal, Aditya, et al. "CoReFusion: Contrastive Regularized Fusion for Guided Thermal Super-Resolution." *Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition*. 2023.
   Link: https://ieeexplore.ieee.org/document/10208919

4. Sriya Rallabandi, Sanchit Singhal, and Pratinav Seth. 2023. SSS at SemEval-2023 Task 10: Explainable Detection of Online Sexism using Majority Voted Fine-Tuned Transformers. In *Proceedings of the The 17th International Workshop on Semantic Evaluation (SemEval-2023)*, pages 1231–1236, Toronto, Canada. Association for Computational Linguistics.
   link: https://aclanthology.org/2023.semeval-1.171/

5. P. Seth, A. Gupta, A. Khan, S. Mishra, A. Bhandari,2022,"UATTA-ENS:Uncertainty Aware Test Time Augmented Ensemble for PIRC Diabetic Retinopathy

Detection",Medical Imagery Meets NeurIPS Workshop, 36th Conference on Neural Information Processing Systems.wha
Link : http://www.cse.cuhk.edu.hk/~qdou/public/medneurips2022/95.pdf

6. A. Bhandari, A. Kasliwal, S. Rallabandi, S. Singhal, P. Seth,2022,"Performance Evaluation of Deep Segmentation Models on Landsat-8 Imagery",Tackling Climate Change with Machine Learning Workshop,36th Conference on Neural Information Processing Systems.
   Link:
   https://s3.us-east-1.amazonaws.com/climate-change-ai/papers/neurips2022/92/paper.pdf
7. A. Sharma and H. Bhatt, "Efficient Energy balance in heterogeneous swarm," 2022 IEEE 7th International Conference on Recent Advances and Innovations in Engineering (ICRAIE), MANGALORE, India, 2022, pp. 42-46
   Link: https://ieeexplore.ieee.org/document/10054278

8. A. Sharma and T. Agarwal, "Fiber Optic Analysis of Different Materials and Geometry for Sensor Application" 2023 IEEE 11th International Conference on Nano and Material Science(ICNMS)
   Link:
   https://preprints.opticaopen.org/articles/preprint/Fiber_Optic_Analysis_of_Different_Materials_and_Geometry_for_Sensor_Application/21937550

9. Shantam Shorewala, Armaan Ashfaque, Sidharth R, Ujjwal Verma, 2021,"Weed Density and Distribution Estimation for Precision Agriculture using Semi-Supervised Learning", arXiv manuscript, Cornell University, IEEE Access, vol. 9
   Link: https://arxiv.org/abs/2011.02193

10. Kumud Lakara, Kumud Lakara, Pratinav Seth, Ujjwal Verma,2021, "Evaluating Predictive Uncertainty and Robustness to Distributional Shift Using Real World Data", arXiv manuscript, Cornell University, Bayesian Deep Learning Workshop
    Link: https://arxiv.org/abs/2111.04665

11. Sidharth R, Abhiraj Tiwari, Parthivi Choubey, Saisha Kashyap, Sahil Khose, Kumud Lakara1 Nishesh Singh, Ujjwal Verma,2021,"BERT based Transformers lead the way in Extraction of Health Information from Social Media",arXiv manuscript, Cornell University, Proceedings of the Sixth Social Media Mining for Health (#SMM4H) Workshop and Shared Task
    Link: https://arxiv.org/abs/2104.07367

12. Saurabh Chaughule, 2021, “Protall (an intelligent multi sensor obstacle avoidance system for automobiles and UAVs)”,First International Conference on Artificial Intelligence, Electronics & Communication System, MIT, Manipal.

13. Harshil Bhatt; Pranesh G; Samarth Shankar; Shriyash Haralikar, 2021, "Wireless Sensor Networks for Optimisation of Search and Rescue Management in Floods,", IEEE International Conference on Electronics, Computing and Communication Technologies (CONECCT), 2021, pp. 1-6.
Link: https://ieeexplore.ieee.org/document/9622534

14. K.S. Dhankhar and D.K. Rajamani, 2017, “Comparative Analysis of Industrial Grade Parallel Gripper and Linear Gripper”, International Society of Automation, Bangalore chapter, 2017
Link:
http://isabangalore.org.in/wp-content/uploads/2017/03/iACT_2017_Report.pdf

15. K.S. Dhankhar, D.K. Rajamani, E.D. Pitichika and Y.S. Upadhyaya, 2017, “Design of Linear Gripper for Unstructured Environment”, International Conference on Applied Sciences, Engineering & Technology, Manipal Academy of Higher Education.
Link:
https://ejournal.manipal.edu/mjst/docs/Vol3_Issue1_June%202018/3-paper.pdf

16. K.S. Dhankhar, D.K. Rajamani, D. Bansal, S. Shorewala, E.D. Pitichika and Y.S. Upadhyaya, 2017, “Design and Development of Planetary Exploration Rover for Unstructured Terrain”, 18th National and 3rd International conferences on Machines and Mechanisms (iNAComm 2017), Bhabha Atomic Research Center (BARC), Mumbai, India,
Link: https://www.springer.com/gp/book/9789811085963

17. J. Samal, J. Joel, P.C. Nair, P.K. Debata, V. Kuchimanchi, R. Jaiswal and A.M. Rao, 2017, “Search for life in 20 minutes”, Symbiot 2017 by the biotechnology department, Manipal Institute of Technology, Manipal Academy of Higher Education

18. V.H. Dhongade, P.K. Debata, J. John and S. Kapoor, 2018, “The Response of Prokaryotic Lifeforms to Environmental Stimuli”, Manipal Research Colloquium 2018, MAHE.

19. K S Dhankhar, Md Suliaman, Shuvadeep Sarkar and Siril D Teja, 2018, “Design and Analysis of Underactuated linear gripper for unstructured environments based on Chebyshev's Lambda Mechanism”, Manipal Research Colloquium 2018, MAHE.

20. Siril D Teja, Md Suliaman and Kulpreet Singh Dhankar, 2018,”Design and Analysis of Under actuated gripper using Chebyshev's lambda mechanism with slip preventive strategy for fragile object” , Second International Conference on

Advancements in Automation, Robotics and Sensing, PSG Tech., Coimbatore.
Link:
https://www.researchgate.net/publication/329830066_Design_and_analysis_of_underactuated_gripper_using_chebyshev%27s_lambda_mechanism_with_slip_preventive_strategy_for_fragile_objects

21. K S Dhankhar, Md Abdul Salman,Md Sulaiman and Shuvadeep Sarkar, 2018, “Design and Analysis of Mars rover suspension based on Chebyshev's Lambda Mechanism”, Manipal Research Colloquium 2018, MAHE.

22. K Lakara, A Bhandari, P Seth, U Verma, 2021, “Evaluating Predictive Uncertainty and Robustness to Distributional Shift Using Real World Data”, Bayesian Deep Learning Workshop NeurIPS 2021,
http://bayesiandeeplearning.org/2021/papers/17.pdf
23. Atirav Seth, Jordan Kurian Kuruvilla, Shashwat Sharma, Jyotishka Duttagupta, Ankur Jaiswal, 2021,”Design and Simulation of 6-DOF Cylindrical Robotic Manipulator Using Finite Element Analysis”, Materials Today: Proceedings.
https://www.sciencedirect.com/science/article/pii/S2214785322010045

24. Harshil Bhatt, Pranesh G, Samarth Shankar, Shriyash H, 2021,“ Wireless Sensor Networks for Optimisation of Search and Rescue Management in Floods”, IEEE CONECCT 2021
Link: https://ieeexplore.ieee.org/document/9622534