



Dr. Anirban Lekharu

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EDUCATION

Degree/Certificate	Institute/Board	CGPA/Percentage	Year
Ph.D. CSE	Indian Institute of Technology, Guwahati	NA	2018-2023
M.Tech. CSE	Indian Institute of Technology, Guwahati	8.67 CPI	2015-2017
B.Tech CSE	Girijananda Chowdhury Institute of Management and Technology, Guwahati	82.74%	2008-2012

WORK EXPERIENCE

- ZF Technology Center India** *April. 2023 - Present*
Specialist in Innovation & Technology Hyderabad
 - * Implementation, validation optimization and porting of algorithms.
 - * Contribution towards active research in autonomous driving perception.
 - * Technical guidance of colleagues in research and development tasks.
- Indian Institute of Technology Guwahati** *Feb. 2013 - Feb. 2015*
Junior Project Fellow Guwahati

RESEARCH INTERESTS

My research interest includes:

Mobile Edge Computing, Network Caching, Multimedia Streaming, Machine Learning, Computer Vision, Autonomous Vehicles

PH.D. THESIS

• Deep Learning Approach for Efficient Mobile Edge Computing

In this dissertation, Deep Learning Approaches to design an efficient and robust caching mechanism at the MEC server is proposed. The primary objective of such a caching strategy is to increase the cache hit rate at the edge server, aiming to improve the end-users' overall Quality of Experience (QoE).

MASTER THESIS

• QoE Aware Client-side Video Adaptation Algorithm for Cellular Networks

This work proposes two client-side rate adaptation models using Machine Learning approaches. The primary objective of the proposed work is maximizing the Quality of Experience (QoE) of an end-user for a video streaming session.

PUBLICATIONS

- Lekharu, A., Jain, M., Sur, A., Sarkar, A.:** "Deep Learning Model for Content Aware Caching at MEC Servers." In IEEE Transactions on Network and Service Management (TNSM 2021), DOI: <http://doi.org/10.1109/TNSM.2021.3136439>
- Lekharu, A., Mouli, K Y., Sur, A., Sarkar, A.:** "Deep learning based prediction model for adaptive video streaming." In IEEE 12th International Conference on COMmunication Systems and NETworkS (Comsnets), January 5-9, 2020, Bangalore, India. DOI: <http://doi.org/10.1109/COMSNETS48256.2020.9027383>
- Lekharu, A., Kumar, S., Sur, A., Sarkar, A.:** "A QoE Aware LSTM based Bit-Rate Prediction Model for DASH Video". In IEEE 10th International Conference on COMmunication Systems and NETworkS (Comsnets), January 3-7, 2018, Bangalore, India. DOI: <http://doi.org/10.1109/COMSNETS.2018.8328225>
- Lekharu, A., Kumar, S., Sur, A., Sarkar, A.:** "A QoE Aware SVC Based Clientside Video Adaptation Algorithm for Cellular Networks". In ICDCN 18: 19th International Conference on Distributed Computing and Networking, January 4-7, 2018, Varanasi, India. ACM, New York, NY, USA. DOI: <https://doi.org/10.1145/3154273.3154312>
- Gaj, S., Rana, S., **Lekharu, A.**, Sur, A., Bora, P.: "RST Invariant MultiView 3D Image Watermarking Using DWT and SVD". in Proceedings of the Fifth National Conference on Computer Vision, Pattern Recognition, Image Processing and Graphics 2015. DOI: <http://dx.doi.org/10.1109/NCVPRIPG.2015.7490066>
- Lekharu, A., Chouhan, PS A., Sur, A., Patra, M.:** "QoE Aware Adaptive Bit-Rate Caching at MEC Server with Reinforcement Learning." In IEEE Transaction on Network and Service Management (IEEE TNSM) (Minor Revision Submitted, December 2023)

7. **Lekharu, A.**, Gupta P., Sur, A., Patra, M.: "**Collaborative based Video Caching in the Edge Network using Deep Reinforcement Learning**", In IEEE ACM Transactions on Internet of Things (ACM TIOT) (**Major Submitted, November 2023**)
8. **Lekharu, A.**, Samanta, A., Sur, A., Patra, M.: "**Content-Aware Caching at the Edge Network using Federated Learning**" In IEEE Transactions on Emerging Trends in Computational Intelligence (IEEE TETCI). (**Major Submitted, August 2023**)
9. Sur, A., Sahu, N., **Lekharu, A.**, Gaj, S., Kumar, S., Rana, S., "Watermark Evaluation Tool", (**Patent Applied**) Application No: T.I.(47)/TIFA/2016 dt. August 24, 2016

TECHNICAL SKILLS

- **Programming:** Python, C++
- **Deep Learning Frameworks:** PyTorch, Tensorflow
- **Simulators:** ns-3, LTE-Sim
- **Operating Systems:** Windows, Linux, Mac

ACHIEVEMENTS

- **MHRD Fellowship grant for 5-years** for pursuing Ph.D. from IIT Guwahati *July 2018 - July 2023*
- **Gold Medal** with the highest percentage in BE (Computer Science and Engineering) under Gauhati University *2012*

TEACHING ASSISTANCE

- **CS 110: Computing Laboratory**, course jointly offered by various faculties of CSE Dept. *Spring 2022*
- **CS 346: Compiler Design**, course offered by Prof. Arijit Sur and Dr. Arnab Sarkar *Spring (2018-2020)*
- **CS 574: Computer Vision using Machine Learning**, course offered by Prof. Arijit Sur *Autumn (2018-2019)*
- **CS 590: Deep Learning**, course offered by Prof. Arijit Sur *Spring (2020-2022)*
- **CS 361: Machine Learning**, course offered by Prof. Arijit Sur *Autumn (2021-2023)*

REVIEWER DUTIES

- IEEE Transactions of Emerging Trends in Computational Intelligence (**TETCI**).
- IEEE Transactions on Network and Service Management (**TNSM**).
- IEEE Transactions of Vehicular Technology (**TVT**).
- Springer Multimedia Systems
- Program Committee Member (IT Track) of 20th International Conference on Distributed Computing and Intelligent Technology (**ICDCIT-2024**).
- Reviewer of the Technical Program Committee of IEEE Guwahati Sub Section Conference, **IEEE GCON 2023**
- National Conference on Communications (**NCC**).
- Pattern Recognition and Machine Intelligence: 8th International Conference (**PRMI 2019**).

WORKSHOP AND CONFERENCE

- IEEE 12th International Conference on COMMunication Systems and NETworkS (**Comsnets**) **2020**, held in Bangalore.
 - IEEE 10th International Conference on COMMunication Systems and NETworkS (**Comsnets**) **2018**, held in Bangalore.
 - Organizing Student member of "Indian Conference on Computer Vision, Graphics and Image Processing (**ICVGIP**)", 18 - 22 December, 2016.
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