

LALIT BHAGAT

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🌐 [lalitbhagat7](https://github.com/lalitbhagat7) 🔗 [lalitbhagat7.github.io](https://github.com/lalitbhagat7) 🎓 [Google Scholar](#)

EDUCATION

University of California - Los Angeles (UCLA) Sep 2021 – Mar 2023 (expected)
Master of Science in Computer Science; GPA: 4/4 LA, CA

Jaypee Institute of Information Technology Jul 2017 – May 2021
B. Tech in Computer Science Engineering (with Honours); Cumulative GPA: 8.7/10 Noida, India

EXPERIENCE

NeWS Lab - Indian Institute of Technology Hyderabad Jun 2020 – Aug 2021
Research Intern | Mentor: Dr. Antony Franklin Hyderabad, India

- Collaborated in Mobile Edge Computing based tiled 360° caching solution that uses Long-Short-Term-Memory (LSTM) and Convolutional Neural Network (CNN) in conjunction to address challenges associated with 360° video caching
- Implemented asynchronous actor-critic (A3C) algorithm of Deep Reinforcement Learning, LFU and LRU for comparison
- Evaluated proposed framework through simulations with real-world head-movement traces, enhanced user experience
- Improved cache hit rate by 10% and reduced end-to-end latency along with back-haul usage by at least 35%

Jaypee Institute of Information Technology Sep 2019 - May 2020
Research Assistant Noida, India

- Researched and developed a Hybrid Adaptive Time Variant Fuzzy Time Series model with Genetic Algorithm
- Integrated and implemented Genetic Algorithms for selection and optimization of fuzzy intervals in FTS
- Evaluated and tested model on real-time Air Quality Index data of 2 cities, improved the RMSE by at least 2 units

Indian Institute of Technology Varanasi (BHU) Jun 2020 – Jul 2020
Summer Intern Remote, India

- Implemented SVM, Logistic Regression and LSTM for classification and prediction of Water Quality Index respectively

Gurugram Police Cyber Security Summer Internship Jun 2020 – Jul 2020
Summer Intern Remote, India

- Created a process to prevent saving and sharing of inappropriate images captured from an image capturing device

PUBLICATIONS

Obscene Image Excluder | App. No: 202011041018 | <https://ipindiaservices.gov.in/publicsearch> 10/23/2020
• Indian Patent (published) | Name of Inventors: **Lalit Bhagat**, Nancy Sharma, Himani Bansal, Kanchan Hans

Kumar, S., **Bhagat, L.**, Franklin A, A., and Jin, J., **Multi-Neural Network based Tiled 360° Video Caching with Mobile Edge Computing**. Under review in Journal of Network and Computer Applications (JNCA). [SCI] [IF: 8.5]

Bansal H., **Bhagat L.**, Mittal S., Tiwari A. (2021) **Image Correction and Identification of Ishihara Test Images for Color Blind Individual**. Proceedings of Second International Conference on Computing, Communications, and Cyber-Security. Lecture Notes in Networks and Systems, vol 203. Springer, Singapore. [SCOPUS] [DBLP]

Bhagat, L. et al. (2021), **Air quality management using genetic algorithm based heuristic fuzzy time series model**, The TQM Journal, Vol. ahead-of-print No. ahead-of-print. [SCOPUS] [IF: 3.25]

TECHNICAL SKILLS

Languages: C, C++, Python • **Machine Learning** • **Deep Learning:** CNN, LSTM
Reinforcement Learning: Deep Q- learning, A3C • **Nature Inspired Algorithms**
Libraries/Frameworks: Tensorflow, Keras, Pandas, OpenCV, Numpy, Scikit-learn

RELEVANT COURSEWORK

Graduate: Machine Learning in Bioinformatics, Deformable Models in Computer Vision, Cognitive AI, Deep Learning

Undergraduate: Introduction to Deep Learning, Machine Learning, Artificial Intelligence, Computational Intelligence, Big Data, Data Mining, Operation Research, Numerical Methods, Data Structures, Algorithm and Problem Solving

PROJECTS

- Detection and Exclusion of Obscene Images** | *Major Project* | *Computer Vision* **Jul 2020 – May 2021**
- Created a process to prevent saving and sharing of inappropriate images captured from an image capturing device
 - Trained MobileNet Architecture on data-set of over 9000 images for classification, and achieved an accuracy of 95%
 - Integrated ML model on client side to prevent security breach; no external API called using internet
- Daltonism** | *Minor Project - 2* | *Image Processing* | *OpenCV* **Jan 2020 – May 2020**
- Developed a mobile application for color the deficient patients, to help them perceive colors they normally can't see.
 - Implemented image processing techniques for mapping of images to different color spectrum that falls in visible spectrum
- Clustering of Air Objects and Trajectory Prediction** | *Team Lead, Smart India Hackathon* **Jan 2020 – May 2020**
- Extracted features like max velocity, max altitude, drop in altitude, etc. from 4D trajectory of air objects
 - Applied K-means algorithm on extracted features for clustering of air objects - Airplane, Missile and Drop Bomb
 - Achieved a R2 score of 99.5 by training separate LSTM models on each air object cluster. Airplane data set: NASA
- Chest Radiology** | *Minor Project - 1* | *Transfer Learning* | *DenseNet-121* **July 2019 – Dec 2019**
- Predicted 5 type of chest diseases using DenseNet-121 architecture and achieved an accuracy of 87%.
 - Trained model on "CheXpert" data-set, developed by Stanford ML Group which contains 244,316 chest radio graphs.
 - Further deployed the project, created a web application by integrating the ML model using Flask framework.
- Smart and Efficient Car Parking System** | *Data Structures Project* | *C++* | *STL library* **Nov 2018**
- Developed a program to guide the drivers to the nearest parking space with respect to lift, to save time and energy.
 - Implemented Heaps data structure using priority queue, and reduced the complexity from $O(k*n)$ to $O(k*\log(n))$.

AWARDS AND RECOGNITION

- Secured **8th** rank in CoDecode, team coding event at Asia's Biggest **Techfest, IIT Bombay**, 2018.
- Team listed in **top 10** out of 1000+ projects for National Convention of AICTE Vishwakarma Award 2020.
- Project listed in **top 10** out of 450+ projects during Gurugram Police Cyber Security Summer Internship 2020.
- Awarded title "**TECH GURU**" of 2016 batch at Delhi Public School, Barra, Kanpur.
- Best Delegation at Model United Nation, 2017 - JSS, Noida.

POSITION OF RESPONSIBILITY

- 120A - Cognitive Psychology** **Jan 2022 – Mar 2022**
Teaching Assistant *University of California, Los Angeles*
- Taking 4 discussion sections of 25 students each.
- IEEE Student Branch** **Aug 2018 – May 2019**
Technical Team Member *Jaypee Institute of Information Technology*
- Taught C programming language to 1st year students | Hosted the CSE event at the IEEE annual fest, XENITH 2019.
- National Service Scheme (NSS)** **Aug 2018 – Mar 2019**
Part of NGO *Jaypee Institute of Information Technology*
- Keen participant in knowledge drives for underprivileged children | Helped me in developing my emotional intelligence.
- Eloquence: Literary society** **Aug 2018 – May 2019**
Team Member *Jaypee Institute of Information Technology*
- Participated in MUNs- 2018, 2019, 2020 | Helped me in developing articulation and communication skills.
- Computer club** **May 2015 – Mar 2016**
Computer Squad President *Delhi Public School*
- Lead, managed and organized all the technical events at my school.