



Mohit Agarwala
Electrical Engineering
Indian Institute of Technology, Bombay
Specialization: Communications Engineering

19307R004
M.Tech.
Gender: Male
DOB: 04-11-1996

Examination	University	Institute	Year	CPI / %
Post Graduation	IIT Bombay	IIT Bombay	2022	7.81
Graduation	MAKAUT	Heritage Institute of Technology	2018	7.85
Graduation Specialization: Electronics & Communication Engineering				

AREAS OF INTEREST

- Wireless Communication
- Optimization
- Computer Networks
- Deep Learning in Image & Speech Processing

PUBLICATION

- Online Partial Service Hosting At The Edge | IEEE Xplore** **ICCCN 2021**
V S Ch Lakshmi Narayana, Mohit Agarwala, Nikhil Karamchandani, Sharayu Moharir **[paper]**
- Proposed a **Dynamic Policy**, α -**Retro Renting**, and provided its performance guarantees at the Edge Server
 - Found several regimes where α -RR **greatly improves cost-efficiency** and, in the worst case, it is **6-optimal**

RESEARCH EXPERIENCE

- **On the Latency & QoS in Haptics Simulation using Video Streaming over Wi-Fi** *[Jun'21 - Present]*
Guide: Prof. Nikhil Karamchandani, EE Dept., IIT Bombay | Master's Thesis
 - **Objective** : To implement QoS for remote control & rendering of graphics in high bandwidth applications
 - Studied Operator/Tele-Operator-Based Haptics application to perform low latency tasks in a wired medium
 - Built a **reliable UDP Protocol for Multi-media applications** in **C++/Python** from scratch
 - Measured **one-way** latency in a congested environment using **Marzullo's Intersection Algorithm(NTP)**
- **High Throughput, Ultra-low Latency Multimedia over Wi-Fi** *[Jul - Dec'20]*
Guide: Prof. Nikhil Karamchandani, EE Dept., IIT Bombay | M.Tech Seminar
 - Studied the effect of **prioritizing traffic** in **IEEE 802.11ax** Wi-Fi, while maintaining **Fairness** and **QoS**
 - Studied practical design choices to find **optimal configuration** of scanning process for **delay optimization**
- **Geolife Trajectory Data Analysis for Content Caching** *[May - Dec'20]*
Guide: Prof. Nikhil Karamchandani, EE Dept., IIT Bombay | Research Project
 - Developed tools for pre-processing and map simulation from **180+ GPS Taxi Data** of Beijing City
 - Implemented **K-means** clustering of data points using **Voronoi tessellation** to the original city map
 - Used a greedy **Fractional Knapsack** approach for **caching content** on a limited available cache size

KEY ACADEMIC PROJECTS

- **Speech to Sign-Language for the Hearing-Impaired** | *Automatic Speech Recognition* *[Jan - Apr'21]*
- **Predicting Release Year of Songs** | *Kaggle Competition | Machine Learning* *[Aug - Dec'20]*
- **Digital Photography with Flash No-Flash Image Pairs** | *Digital Image Processing* *[Aug - Dec'20]*
- **Employee Attrition Classification** | *Kaggle Competition | Machine Learning* *[Aug - Dec'20]*
- **Facial Emotion Recognition using Deep Learning** | *Machine Learning* *[Aug - Dec'20]*
- **Automatically Recognizing Swahili Speech using Kaldi** | *Automatic Speech Recognition* *[Jan - Apr'21]*

TECHNICAL SKILLS

- **Programming Languages** : C, C++, Python, HTML | **Operating Systems**: Windows, Linux
- **Tools and Software** : MATLAB/GNU Octave, TensorFlow, PyTorch, Pandas, Matplotlib, NumPy, Scikit-learn

RELEVANT COURSES

- Statistical Signal Analysis
- Foundations of Machine Learning
- Wireless & Mobile Communication
- Digital Message Transmission
- Automatic Speech Recognition
- Optimization
- Digital Image Processing
- DSP & its Applications
- Communication Networks

POSITIONS OF RESPONSIBILITY

- **Institute Interview Coordinator** | Institute Placement Team, IIT Bombay *[Nov - Dec'19]*
- **Mess Councillor** | Hostel Council Team, IIT Bombay *[Aug'19 - Apr'20]*

MISCELLANEOUS

- Secured **98.86** percentile in **GATE-19**(Electronics & Communication Engineering) among 104782 candidates
- Awarded **Hostel Organization Special Mention** for exemplary contribution to Hostel-4 throughout the year
- Won **Gem of the General Championship**(MDGC-2019) Hostel-4, IIT Bombay, as part of the Dramatics team
- Participated in short course on "Python for **5G MU**, **Massive MIMO**, and **mmWave MIMO**" by IIT Kanpur
- Vocational Training in **All India Radio** on Installation of Studios, High Power DRM Medium Wave Transmitters
- **Interests and Hobbies**: Cricket, Badminton, Table tennis, Listening to music