

Mahesh Lomrar

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Education

Indian Institute of Technology, Bombay, [B.Tech in Computer Science & Engineering](#) CPI:7.02|'17-'21
Aastha Academy Sr. Sec. School, Sikar, [Class-XII \(RBSE\)](#) 85.60%|'16
Tagore International School, Kuchaman City, [Class-X \(CBSE\)](#) CGPA:9.4|'14

Work Experience

Software Development Engineer, [JioMart Team - Reliance Jio](#) July'21-Present

- Designed and Implemented an **ACL** (Access-control-list) UI from scratch using **React** that resulted in smooth and effective data sync to JioMart and JioMart Express for the Business Team.
- Designed and Implemented **AAA** (Authentication, Authorization, Accounting) **Logs** that allowed the administrator to configure and manage access to the computer resources and auditing ability.
- Developed a **Hashing technique** to **optimize time and memory** usage in daily data syncing processes.
- Collaborated with team on design, development, and launching of the **JioMart Express** in **one-week** timeframe.
- Designed, modified, and implemented the **query rules** for Algolia that helped in **boosting** of merchandise sales.

Software Engineer Intern, [Samsung R&D Delhi](#) May'20-Jun'20

- Worked remotely on the well-known **Transformer** model for developing a Text Summarizer in Python.
- Worked on implementation of the **LSTM encoder-decoder** Architecture with the **Attention Mechanism**.
- Worked on **NLTK** library for text cleaning, data preprocessing and trained model on Inshorts News Dataset.

Key Projects

Blockchain Messaging Service Aug'20 - Nov'20
Guide: Prof: Vinay Ribeiro [IIT Bombay](#)

- Designed a simple version of real-time **distributed Blockchain** for text message exchange between users.
- Based on a fully-connected graph-based distribution of peers and seeds in a **dynamic network** scenario.
- Implemented functionalities like **Proof of Work**, **Block Validation**, block flooding attack, genesis block.
- Tested against an adversary following **network flooding attack** and visualized the mining power utilization.

Compiler for C-like language Jan'20-May'20
Guide: Prof: Uday Khedkar [IIT Bombay](#)

- Designed a compiler and evaluator for C-like language supporting functions from scratch using **yacc** and **lex**.
- System consists of several pipelined modules like **token detection**, **abstract syntax tree**, assembly language.
- Have functionalities like **arithmetic**, **relational & logical expressions**, control flow statements & **recursions**.

Face Recognition and Emotion Detection Aug'19-Nov'19
Guide: Prof. Ganesh Ramakrishnan [IIT Bombay](#)

- Built and implemented a **CNN Keras** model for face recognition & emotion detection using **sklearn** & **CV2**.
- Used **Haar Cascade** classifier for training which internally uses the **Viola-Jones Algorithm** in python.
- Achieved **Inference** time of **80ms** and **accuracy** above **81%** with three classes for face and seven of emotion.

Border Gateway Protocol Aug'19-Apr'19
Guide: Prof. Ashwin Gumaste [IIT Bombay](#)

- Constructed a **Finite State Machine** to maintain a table of all BGP peers and their operational status.
- The **Border Gateway Protocol** is involved in exchanging internet routes and reachability information.

Other Projects

Glacier Zone Identification

Feb'21-Apr'21

Guide: Prof. Gulab Singh

[IIT Bombay](#)

Identified supraglacial, snout, proglacial, middle moraine, debris, accumulation zone, ablation zone in a glacier by creating and interpreting **FCC** images using **QGIS**.

Email Application

Feb'19-Mar'19

Guide: Prof. Kameshwari Chebrolu

[IIT Bombay](#)

Designed a simplified version of **PoP3 email protocol** for transferring files between client and server. Application also supports multiple clients connected simultaneously to server.

Github based Android App

Sep'18-Oct'18

Guide: Prof. Soumen Chakrabarti

[IIT Bombay](#)

Implemented an android app using the **Android Studio** to gather data from Github using curl calls. Used the app to access GitHub's public API to fetch information about a user's public repositories.

Simulation of Game Battleship

Aug'18-Oct'18

Guide: Prof. Soumen Chakrabarti

[IIT Bombay](#)

Designed a simple simulation of the game Battleship using **Reinforcement Learning** in Python Language.

SAT Solver

Feb'18-Mar'18

Guide: Prof. Amitabha Sanyal

[IIT Bombay](#)

Implemented a recursive version of the **DPLL algorithm** in **LISP** language to check satisfiability of **CNF** statement. DPLL uses **unit propagation** and **literal elimination** by **Backtracking-search algorithm**.

Achievements

- Secured **All India Rank 281** in **JEE ADVANCE 2017** out of 220,000 candidates.
- Secured **All India Rank 333** in **JEE MAINS 2017** out of 1,200,000 candidates.

Technical Skills

- **Languages** - C/C++, Scheme/Racket, Python, Java, Prolog, Bash, VHDL, Awk
- **Development** - Html, CSS, PHP, JavaScript, Django, React, Bootstrap
- **Software** - MATLAB, DevOps, AWS Console, Git, \LaTeX AutoCAD, Linux, Excel

Relevant Coursework

- **Machine Learning** - Artificial Intelligence and Machine Learning, Deep Learning - Theory and Practice, Deep Learning for Natural Language Processing, Foundations of Intelligent and Learning Agents
- **Computer Networks and Security** - Foundations of Network Security and Cryptography; Introduction to Blockchains, Cryptocurrencies and Smart Contracts, Computer Networks
- **Computer Science** - Data Analysis and Interpretation, Design and Analysis of Algorithm, Logic for CS, Operating Systems, Computer Architecture, Implementation of Programming Languages, Data Structure and Algorithms, Automata Theory, Database and Information Systems, Abstractions and Paradigms for Programming
- **Maths and Statistics** - Calculus, Linear Algebra, Differential Equations, Probability, Numerical Analysis
- **Finance** - The Complete Investment Banking Course(Udemy)

Extra-Curricular Activities

- Handled 30+ organizers and guided them into working for the **Web and Tech** Department in Mood Indigo.
- Underwent one-year yoga training under **National Sports Organization** in **Cricket** for **80+** hours.
- Created **App and Website** services for the Mood Indigo, the Asia's largest college cultural festival.
- Completed the **Film Editing** course in freshezza organized by SilverScreen 2017, IIT Bombay.
- Part of the **Gold-winning** hostel team in inter hostel sophomore cross country run GC 2018.
- Successfully built a **remote-controlled-car** in a team of four in **XLR8** competition.