Mohd Safwan
Electrical Engineering
Indian Institute of Technology Bombay
Specialization: Communication & Signal Processing

17D070047
Dual Degree (B.Tech. + M.Tech.)
Gender: Male
DOB: 22-01-1999

Examination	University	Institute	Year	CPI / %
Graduation	IIT Bombay	IIT Bombay	2022	8.22

SCHOLASTIC ACHIEVEMENTS

- Secured **All India Rank 457 / Top 0.23%** in JEE Advanced 2017 out of *200,000* students.
- Ranked in **Top 0.12%** students in JEE Main 2017 out of *1.2 million* students.
- Was placed in Statewise **Top 1%** in NSEA (Astronomy Olympiad) and selected for INAO.

WORK EXPERIENCE

Applied Scientist Intern — *Matching Quality Team, Amazon* *Summer '21*
- Built multilingual and multimodal deep learning based models to match products with search queries.
- Optimized the training time by **75%** and achieved upto **10%+** gains in F1 scores over multiple locales.

Co-founder, Technical Lead — *Augle AI (augle.ai)* *Jan '19 - Dec '20*
- Built and deployed multiple Imaging, Vision and AI solutions as APIs to various clients using **AWS services**.
- Managed a team of more than 8 researchers and developers to iteratively improve our solutions.
- **Won** Startup Jalsa 2019 and secured funding at **5.3 Cr** valuation. **Winner** of E Cell's Eureka IITB track.

Finding Images/Videos using a Selfie — *Freelance Project, Reels & Frames (picsniff.com)* *Summer '20*
- Developed a solution to find all photos and videos of a person from a collection with **95%+ accuracy**.
- Optimized the search time to a **few milliseconds** for searching in 1000 images with multiple faces in each.
- Optimized the video memory (GPU) usage when handling images with arbitrary aspect ratios.

KEY PROJECTS

Parallelized Verification of Conjecture for Metric Dimension — *C++, CUDA (Course Project)* *Spring '21*
- Wrote C++ code to verify the conjecture for metric dimension of a grid graph augmented with one edge.
- Implemented own Hash Set on GPU due to lack of STL library and got **200x** improvement with CUDA.

Single Image Dehazing using GAN — *Deep Learning, Computer Vision (Research Project)* *Autumn '20*
- Developed a deep learning model to successfully remove haze from hazy images in a single-shot fashion.
- Trained a generative U-Net network using Conditional GAN framework achieving impressive **24dB+ SNR**.

Tic Tac Toe Learning Environment — *Reinforcement Learning (Course Project)* *Autumn '20*
- Wrote an open source framework for evaluating game playing agents on tic tac toe game using websockets.
- Added implementation of **Deep Q Network** agent and classic algorithms like MiniMax, AlphaBeta search.

Petyr : An Open Source Python Library — *Self Project* *Spring '20*
- Developed a fast library for working with 2D geometric transforms with **300+** monthly downloads.
- Wrote unit tests with full coverage with automated tests and build checking at every push using Travis CI.

POSITIONS OF RESPONSIBILITY

Teaching Assistant | Checking reports and conducting vivas in Control Systems Lab. *Autumn '21*

Convener, Web & Coding Club | Conducted various boot-camps and competitions for the club. *2018-'19*

TSS Instructor | Taught 100+ students Python and concepts of Object Oriented Programming. *Autumn '19*

School of Science | Mentored 4 freshmen in implementing basic DL algorithms from scratch. *Summer '19*

EXTRACURRICULAR ACTIVITIES

- Volunteered in NSS to teach Mathematics to underprivileged children.
- **Winner** of Cybersecurity Club's jeopardy style Capture The Flag competition 2020.
- **2 Time National Winner**, IPL Auction Competition 2018 & 2019 by Entrepreneurship Cell.
- **Won** TechFest's Coding Challenge Enigma with teams coming from colleges all over India.