Sarvesh Mehtani　　　　　　　　　　　　　　　　　　**170050107**
Computer Science & Engineering　　　　　　　　　　　**B.Tech.**
Indian Institute of Technology, Bombay　　　　　　　**Gender: Male**
　　　　　　　　　　　　　　　　　　　　　　　　　　DOB: 10-05-1999

Examination	University	Institute	Year	CPI / %
Graduation	IIT Bombay	IIT Bombay	2021	-
Intermediate	CBSE, New Delhi	Bhavan Vidyalaya, Panchkula	2017	95.40%
Matriculation	CBSE, New Delhi	Bhavan Vidyalaya, Panchkula	2015	95.00%

Pursuing **Honors** in Computer Science and Engineering

ACADEMIC ACHIEVEMENTS

- **All India Rank 1** in **JEE Advanced** out of **2.2 lakh** students　　　　　　　　　(2017)
- **All India Rank 55** in **JEE Main** out of **1.2 million** students　　　　　　　　　(2017)
- Received **Gold Medal** for being placed among the **top 35** students in **INChO**, HBCSE　　(2017)
- Attended **Orientation-Cum-Selection Camp for IMO**, HBCSE (amongst **top 35** in India)　(2016)
- Secured **2 AP grades** (given to top 1% students) in courses **Calculus** and **Chemistry Lab** (2017-18)
- Among **Top 3** students selected for Semester Exchange to **National University of Singapore** (2019)

WORK EXPERIENCE

Multilingual Representation Learning for Indian Languages　　　　　　Summer 2020
Managers: Partha Talukdar, Shachi Dave | Research Project　　　　*NLU, Google Research India*

- Trained **HindiBERT** model on **Cloud TPUs** & obtained SOTA results on **XTREME** Benchmark
- **Collaborated** with **5+ researchers** to develop IndicBERT-mBERT focused on Indian Languages
- Conducted **PCA** Analysis to study **vocabulary transfer** across scripts & languages
- Evaluated language understanding of mBERT for **Transliterated** and **Code-Switched Text**

Automated Alpha Generation　　　　　　　　　　　　　　　　　Winter 2019
Manager: Srinjoy Ganguly | Alpha Researcher　　　　　*Edelweiss Financial Services Limited*

- Derived profitable **Market Neutral Alphas** in Indian Equity space using **Genetic Algorithms**
- Constructed **Hybrid Artificial Bee Colony** with **Differential Evolution** for **Alpha Search**

Earnings Trading Strategy Development　　　　　　　　　　　　　Summer 2020
Manager: Sourabh Sisodiya | Quantitative Research Associate　　　　　*Quantify Capital*

- Designed and back-tested Medium Frequency **Quantitative Trading** Algorithms to generate alphas
- Analyzed large financial data sets to identify **volatility-based options trading** opportunities

ML to Scale-Up NP-Hard Combinatorial Optimization Solutions　　　　Summer 2019
Guide: Dr. Deepak Ajwani | Research Project　　　　　　*University College Dublin*

- Worked on scaling **K-Median Solver** by **pruning input dataset** using **Random Forest Classifier**
- **Explored** various **Geometric Features** to use for training of the classifier

KEY PROJECTS

Named Entity Recognition for Low Resource Languages　　　　　　Autumn 2020
Guide: Prof. Sunita Sarawagi | B.Tech. Project　　　　　　　　*IIT Bombay*

- Exploiting **Language Relatedness** to improve NER Performance on **Low Resource Languages**
- Ideating a novel method for incorporating **cross-lingual info.** through **Induced Bilingual Lexicons**

Flappy Bird Bot　　　　　　　　　　　　　　　　　　　　Autumn 2019
Guide: Prof. Ganesh Ramakrishnan | Course Project　　　　　　　*IIT Bombay*

- Implemented **Genetic algorithm** and **Q-learning** to create an AI for the game Flappy Bird
- Performed **Hyperparameter-Tuning** and **analysis & comparison** of the two algorithms

Secure Personal Cloud　　　　　　　　　　　　　　　　　Autumn 2018
Guide: Prof. Soumen Chakrabarti | Course Project　　　　　　　*IIT Bombay*

- Implemented a **cloud-based file storing system** for Linux & Web with custom encryption schema

- Used **Hybrid Encryption Schema** (RSA+AES) to implement **encrypted file-sharing**
- Used **Server Client Modelling** and **Socket Programming** to **synchronize multiple clients**
- Implemented **Client-side Encryption** and used **Django** for implementing server back-end

PoolCars   Spring 2019
Guide: Prof. Chan Chee Yong | Course Project   *National University of Singapore*
- Engineered a web-based **Car Pooling Application** using **PostgreSQL** & **Node.js**
- Developed an **interactive front-end** with **password authentication**, bidding & reviews
- Designed an **ER Data Model** with multiple Entities, Relationship Sets & Triggers

PhotoArt   Spring 2018
Guide: Prof. Amitabha Sanyal | Course Project   *IIT Bombay*
- Developed an Image Editing tool in **Racket programming language** and created related **GUI**
- Implemented utilities like **Gaussian Blur**, **Hue Variation**, Rotation, Superposition & Undo

Other Projects   Course Projects
- **Networks**: Implemented **reliable chat** program using **checksum Verification** over a UDP channel
- **Operating Systems**: Examined **xv6 source code** and implemented priority based **process scheduling** algorithms, lazy page allocation **memory management technique** and applications of **pthreads**
- **Mini Compiler**: Used **Lex** & **Yacc** for tokenization, parsing & to create **ASTs**, **TACs** & symbol tables

AWARDS AND SCHOLARSHIPS

- Received **Aditya Birla Scholarship**, given to only 15 engineering students in India   (2018)
- Received **KVPY Fellowship** with **AIR 38** organized under **DST, Government of India**   (2016)
- Received **NTSE Fellowship**, NCERT under Ministry of **HRD, Government of India**   (2015)
- Received **Shri. C. Subramanium Award for Excellence in Character** by **Bhartiya Vidya Bhavan** (more than 70 schools in India)   (2015)

POSITIONS OF RESPONSIBILITY

Teaching Assistant   Autumn 2018
BB101-Physical and Medical Biology under Prof. Ambarish Kunwar   *IIT Bombay*
- Among the 20 students selected for **teaching** a class of **500 1st-year students**
- Coordinated with Biology Dept. to **conduct regular tutorial sessions** & **evaluate exam papers**.

Department Academic Mentor   CSE Department | Autumn 2020-Present
- **Mentoring 5 sophomore students** to assist them in navigating department specific-curriculum

Social Secretary   CSE Department | Autumn 2018-Spring 2019
- Responsible for **planning and executing** all social events for **1000+ students** of CSE department

EXTRACURRICULARS

- Part of **Institute Contingent** that secured **2nd position** at **Inter-IIT Culturals Meet**
- **Volunteered** under the **National Service Scheme** (NSS) IIT Bombay involving **teaching students at an NGO** and **recording Hindi Audio Books**, as part of the **Voice for Purpose** initiative
- **1st position** in **District Level Chess Championship** in Panchkula
- **1st position** in the **Wolf of the Wall Street Competition** which simulated a **Live Stock market**
- Engineered an **app-controlled bot** and a **Remote Controlled Plane** from scratch

TECHNICAL SKILLS

Programming Languages	C++, Python, Rcpp, Java, Bash, AWK, SWI-Prolog, Scheme, MIPS
Software Skills	Android Studio, CMake, Passport.js, LaTeX, GIT, COQ, SolidWorks
Data Science	TensorFlow, PyTorch, GCP, Scikit-Learn, MATLAB, Scikit-Learn, SQL

KEY COURSES

Advanced Machine Learning	Organization of Web Info	Optimization
Speech, NLP & Web*	Cryptography	Game Theory
Information Retrieval & Mining*	**Intelligent & Learning Agents***	Innovation by Design*

* marked courses will be completed by Nov 2020