Shreya Laddha
Electrical Engineering
Indian Institute of Technology Bombay

180070054
UG Second Year
Female
DOB: 16/11/2000

Examination	University	Institute	Year	CPI / %
Graduation	IIT Bombay	IIT Bombay	2020	9.09
Intermediate/+2	CBSE	S.J.Public School	2018	96.40
Matriculation	CBSE	Maheshwari Girls Public School	2016	10.00

Pursuing a **Minor** in **Computer Science and Engineering**

SCHOLASTIC ACHIEVEMENTS

- Secured **All India Rank 607** in **JEE-Advanced** out of 230 thousand candidates *[2018]*
- Secured **All India Rank 608** in **JEE-Main** out of 1.2million candidates *[2018]*
- Secured **All India Rank 534** in Kishore Vaigyanik Protsahan Yojana(**KVPY-SA**) organised by the Department of Science and Technology, Government of India among 60,000 candidates *[2016]*
- Awarded **KVPY fellowship** in Indian Institute of Science during the **Vijyoshi** camp *[2017]*
- Received a **High Distinction** in Australian National Chemistry Quiz(**ANCQ**) *[2013]*

TECHNICAL PROJECTS

Team Member | Student Satellite Team IIT Bombay

Advitiy: Communication Subsystem *[Feb '19 - Jun '19]*

Advitiy is the next step after Pratham: first student satellite of IIT Bombay

- Developed **Link Budgets** for **Uplink**, **Downlink**, and **Beacon** of the satellite after studying similar link budgets for various past successful satellite missions
- Determined the **Modulation Methods** and **System Baud Rate** to be used for the three communication links in the satellite by analyzing link margins at different **Bit Error Rates**
- Identified concerns related to defining **Noise Temperatures**, threshold **Signal-to-Noise Ratio** for different receivers and various types of **Link Margins** for the distinct modulation methods
- Successfully received **Slow Scan Television** images broadcasted from **International Space Station** and **APT** weather satellite images from **NOAA** satellite using a handheld receiver

PS4-OP Mission: Auxiliary System *[Jul '19 - Present]*

This mission aims to design a space-based experiment for PSLVStage 4 Orbital Platform

- Proposed and analyzed **Inflatable Systems** as a technology demonstration payload for the mission
- Scrutinized the **feasibility** of different payload ideas under aspects like accessibility to technology, availability of resources and other system-level constraints provided by **ISRO**
- Identified **system-level requirements** from launch loads and space environment for the auxiliary system to facilitate the demonstration of **Star Tracker** and **Antenna Deployment System**
- Designed a **PCB** using **Eagle CAD** for the peripheral circuit of a single-chip transceiver **CC1125**

AquaGerator | Institute Technical Summer Project *[Jun'19 - Jul'19]*

Institute Technical Council

- Designed an autonomous system that converts water vapour present in the atmosphere into water inside an **airtight**, **watertight** and thermally **insulated** container
- Explored **thermodynamics of water** in order to select appropriate equipment such as the condenser, compressor and expansion valve to implement the mechanical **refrigeration** cooling system
- Conducted experiments and generated **5-7 litres** of water in over **20 hours**
- Presented the concept and prototype of the AquaGerator in **ITC expo** attended by **300+** people

Machine Learning and Deep Learning | Summer of Science *[Jun'19 - Jul'19]*

Maths and Physics Club

- Studied and implemented various techniques of regression such as **Multiple**, **Logistic** and **Polynomial regression** for prediction and forecasting of numerical and categorical values
- Implemented **Deep Learning** algorithms like **Auto Encoders**, **RBMs**, **CNN**, **ANN**, **RNN** and **SOM** using **Keras** and **PyTorch** and made recommendation, fraud detection, image recognition, multi-class image classification and stock price prediction systems.

Deep Learning *[Spring '20]*

Guide: Prof. Biplab Banerjee (Dept. of Centre of Studies in Resources Engineering) *Course project*

- Developed a **Fake News Classifier deep learning model** using CNN, LSTM and dense layers
- Designed regression models for **house price prediction** and **flight delay prediction** in **Julia**

Cluster Analysis of Customer Reviews *[Apr'20 - present]*

Guide: Prof. Gourab Nath (Praxis Business School)

- Designing a system which **groups customers** having same sentiment on different product features
- Implemented **NLP** techniques like **text cleaning, tokenization, association rules mining, feature extraction**, **sentiment analysis**, **opinion polarity extraction** and **clusterization**.

Digital Smiley Display *[Spring '19]*

Guide: Prof. Mahesh B. Patil (Dept. of Electrical Engineering) *Course project*

- Developed a logic circuit to display a smiley face on **8*8 LED Matrix** using **LM555** timer
- Implemented the circuit using a **Down Ripple Counter** and an **Inverting Decoder**

INTERNSHIPS

Winter Internship | Feature Engineering and Data Analytics *[Dec '19]*

Edelweiss Financial Services Ltd

- Acquired knowledge about credit analysis of loans especially **SME Business Loans**
- Analysed **banking and financial details** provided by the customers and developed **600+ features** along with **loan default prediction deep learning model** using ANN and SOM.

Summer Internship |Python/Firmware Development in Electronics *[May'20]*

Avrio Energy Ltd.

- Explored libraries like **spidev, pigpio, bcm2835 and gpio** for establishing **SPI** communication on **RPi**
- Successfully established **I2C** interface between RPi and **ADE7880** and learned about **HSDC** interface

POSITIONS OF RESPONSIBILITY

Events Coordinator| Robowars | Techfest *[Aug '19 - present]*

Asia's Largest Technical Fest with a footfall of over 175 thousand people

- Involved in execution of **India's Largest** International Robowars with a budget of over **4 Million** and addressing participants from **10+** International teams and **30+** Indian teams
- Leading a team of **10+** organizers responsible for the planning and execution of **280+** events

TECHNICAL SKILLS

Programming Languages	Embedded C, C++, Python, Java, MySQL, HTML, CSS, Julia
Software Packages	ArduinoIDE, Ngspice, MATLAB, GitHub, Gnuplot, LaTeX, Software-defined Radio (SDR) Console, Saturn PCB Toolkit, Unity
Design Softwares	SolidWorks, Eagle, AutoCAD

EXTRACURRICULAR ACTIVITIES

- Completed **Deep Learning A-Z** and **Machine Learning A-Z** online courses on Udemy, and **Computer Vision** and **Natural Language Programming** courses from Microsoft on edX. *[2020]*
- Completed **80 hours** of training in **Chess** under the **National Sports Organisation** *[2019]*
- Presented Pratham and Advitiy as a member of **Student Satellite Team** during ITC expo *[2019]*
- Made a **bluetooth controlled** obstacle maneuvering bot with differential mechanism in XLR8 *[2018]*
- Designed and tested an **autonomous Line Follower** bot using **Arduino** and **IR sensors**. *[2019]*
- Designed a **Xyloband** to synchronize flashing of LEDs with input from a microphone *[2019]*
- Awarded the **Best Chess Player** of the year (2014-15) Award in the school *[2015]*
- Anchored in the **School Annual Function** 2016 in front of an audience of **250+** people *[2016]*

COURSES UNDERTAKEN

Electrical	Electronic Devices & Circuits, Data Analysis and Interpretation, Analog Circuits*, Digital Systems*, Signals & Systems*, Electrical Machines & Power Electronics*
Computer Science	Logic for Computer Science, Data Structures and Algorithms*
Others	ML for Remote Sensing-I* , Complex Analysis, Linear Algebra

[to be completed by May '20]*