

SCHOLASTIC ACHIEVEMENTS

- Currently ranked **9**(out of 100 students) in Electrical Engineering(Dual Degree Program) (2022)
- Secured **All India Rank 662**(out of **150000** candidates) in the **JEE Advanced** examination (2021)
- Secured **99.84** percentile(out of **1.0** million candidates) in the**JEE Mains** examination (2021)
- Secured **99.94 percentile**(out of **192,000** candidates) in the **Maharashtra-CET** examination (2021)
- Secured **100 percentile** in the Mathematics Section of the **Maharashtra-CET** examination (2021)
- Scored **383/450** marks in the **BITSAT** examination conducted by BITS Pilani (2021)
- Won **Silver Medal** in the **Homi Bhabha Bal Vaidnyanik Spardha** examination (2018)
- Secured **School Rank 1** in the **IMO Olympiad** conducted by the Science Olympiad Foundation (2017)

KEY PROJECTS

Bubble Trouble | CS 101 Course Project (2021)

Guide: Prof. Parag K. Chaudhary(Department of Computer Science & Engineering IIT Bombay)

- Designed a video game(*Bubble Trouble*) in **C++** using **efficient libraries** to analyze the score and time variables
- Utilized **Object Oriented Programming** to instantiate the shooter and the bubble objects and added graphics
- Implemented **3** levels of difficulty and a user friendly interface to enhance the gaming experience

ALU Design | Digital Circuits Lab (2022)

- Designed an ALU using Behavioral and Structural Modelling and ran RTL simulation on Quartus
- Implemented the design on a Xenon Board and verified it using ScanChain

Word Detector | Digital Circuits Lab (2022)

- Designed a Word Detector Circuit using a Mealy Finite State Machine model and D-flip flops
- Programmed the model using VHDL and ran RTL Simulations on Quartus to verify the design
- Implemented the design on a Xenon Board and used Sanchain to verify the success of the model

EnB Entrepreneurship Project | E-Cell IIT Bombay (2021)

- Analysed the assets available to a rural village *Khoste* and inspected methods to efficiently utilize them
- Envisioned Khoste as a potential tourist attraction and ideated various aspects of the same
- Designed a business model to sustainably develop the village by taking into account existing infrastructure and additional requirements to compete with existing tourist hubs

TECHNICAL SKILLS AND EXPERIENCE

Programming Skills

<i>Python</i>	<ul style="list-style-type: none">• Modelled the 'Mark and Recapture' method using NumPy and Matplotlib libraries• Designed a Probabilistic System to model Data Packet Transmissions based on geometric distribution of packet arrival and packet departure random variables• Designed a model to estimate and plot the data population average of a large population
<i>C++</i>	<ul style="list-style-type: none">• Developed a Banking Transaction System using structs to model the Bank and User• Designed and implemented a Fast Exponentiation Algorithm to reduce computational time
<i>VHDL</i>	<ul style="list-style-type: none">• Designed an ALU using Behavioral and Structural Modelling and implemented the design on a Xenon Board and verified the design using RTL Simulation and Sanchain• Developed an Universal Shifter to shift the input bits by a certain specified amount(input)• Designed a Sequence Generator using an FSM and D-flip flops through structural modelling

Other Skills

ME119	<ul style="list-style-type: none">Completed a semester long course on Technical DrawingDrew the Orthographic and Isometric views of real world objects having complex geometries
GNURadio	<ul style="list-style-type: none">Modelled time signals as discrete systems on GNURadio and analysed their waveformsDesigned a program to play a given tune with specified frequencies and time duration

COMPUTER SCIENCE & ENGINEERING MINOR

- Examined the fundamentals of the 5 layer networking model exploring each layer in detail
- Studied coding schemes such as **BPSK, QPSK, QAM-256** and so on, along with line coding schemes such as **RZ and NRZ, Manchester Coding and Differential Manchester Coding**
- Analysed the **Cyclic Redundancy Check** algorithm and explored **Galois Field Theory** and its applications in error detection
- Studied the **Standard Ethernet CSMA/CD Protocol (IEEE 802.3)** and designed an algorithm to model a malicious node in an Ethernet LAN
- Mastering **Socket Programming** and implementing it to build an ARQ on top of UDP sockets

KEY COURSES UNDERTAKEN

Electrical	Analog Electronics Digital Systems Digital Circuits Lab Power Engineering Signal Processing Probability and Random Processes Introduction to Electrical Engineering
Tech	Computer Networks (Minor) Computer Programming and Utilization Calculus I Calculus II Differential Equations Linear Algebra Complex Analysis Basics of Electricity & Magnetism Quantum Physics and Application
Others	Biology Engineering Graphics and Drawing Chemistry Economics

EXTRA-CURRICULARS

- Completed **1** year of **professional** Weightlifting training under **NSO** (National Sports Organisation) (2021)
- School representative in Inter-School Chess Tournaments (2017)
- Was among the team of 5 people which secured the **3rd** position in the **SARC Crypt Hunt** (2021)
- Completed multiple dance courses under the Shiamak Dawar Dance Academy (2017)
- Completed multiple Judo Courses and was awarded a Blue Belt (2017)