



Yash Jain
Computer Science & Engineering
Indian Institute of Technology Bombay

UG Third Year (B.Tech.)
Email: yash.jain3599@gmail.com
Web: www.cse.iitb.ac.in/~yashjain/home
DOB: 03-05-1999

Examination	University	Institute	Year	CPI/%
Graduation	IIT Bombay	IIT Bombay	2019	8.65
Intermediate/+2	Bhagat Public Sr. Sec. School	CBSE	2017	96.00
Matriculation	St. Anselm's Pink City Sr. Sec. School	CBSE	2015	10.00

Pursuing a **Minor in Management**

SCHOLASTIC ACHIEVEMENTS

- Selected in **Summer Undergraduate Internship Program** at Carnegie Mellon University (2019)
- Gold Medalist** in theory and **Silver Medalist** in practicals representing India at 11th International Junior Science Olympiad held in Mendoza, Argentina (2014)
- Secured **All India Rank 29** in **JEE-Advanced** out of 220,000 shortlisted candidates (2017)
- Secured **All India Rank 159** in **JEE-Main** out of 1 million candidates (2017)
- Amongst **top 35 students** to attend the OCSC of Indian National Astronomy Olympiad (2017)
- Selected in **top 300 students** in India to appear for Indian National Physics, Chemistry Olympiads (2017)
- Bagged **All India Rank 8** in **KVPY Fellowship** by DST, Govt. of India (2016)
- Recipient of **National Talent Search Examination Fellowship** by NCERT, Govt. of India (2014)
- Received **Infosys Award** for excellent performance in the International Olympiads (2014)
- Champion of Champions** at a State level mental arithmetic competition organized by UCMAS, India (2013)

RESEARCH PROJECTS

RFID Tattoo: A wireless platform for speech recognition

Guide: Prof. Swarun Kumar

(Paper accepted at UbiComp, 2020)

Summer 2019

Carnegie Mellon University

- Speech recognition platform for voice impairments through wafer-thin, battery-free and stretchable RFID Tattoos
- Collected own sensor data and implemented Random Forest model calibrated on the stretch of tags to achieve state of the art 86% accuracy on a vocabulary size of 100 most common English words

Increasing the range of Near Field Communication

Guide: Prof. Swarun Kumar

Summer 2019 - Present

Carnegie Mellon University

- Conducted experiments to determine the effects of antenna design and its placement on NFC range
- Developed codes for software-defined radios USRP for skimming live NFC signal request-response as well as synchronously transmitting phase-shifted NFC signal from multiple USRPs to perform in-air beamforming

Abstractive Text Summarisation

Guide: Prof. Ganesh Ramakrishnan | Course Project (Artificial Intelligence & Machine Learning)

Autumn 2019

IIT Bombay

- Implemented Pointer-Generator network with Coverage building summary from both text and word bank
- Improved efficiency over Seq-to-Seq attention model by avoiding information fallacy and word repetitions

Adversarial Reprogramming of Neural Networks

Guide: Prof. Ajit Rajwade & Prof. Suyash Awate | Course Project (Digital Image Processing)

Autumn 2019

IIT Bombay

- Reprogrammed the six ImageNet classification models on MNIST and CIFAR-10 dataset to perform a task chosen by the attacker by finding a single adversarial perturbation added to all test inputs
- Illustrated the vulnerability in neural networks that perform a task chosen by the adversary despite being not trained to do this task originally

Novel alternative to analyze multiple choice questions

Guide: Dr. P.K. Joshi

(Paper under review in Practical Assessment, Research Evaluation (PARE) journal, 2019)

Autumn 2018

TIFR

- Devised an alternate approach for educational assessment of multiple choice questions using Discriminant Index
- Compared existing and new approach against conjecture data and data from an international competitive exam

Nuclear data survey

Guide: Dr. P.K. Joshi

(Paper accepted at DAE-BRNS Symposium on Nuclear Physics, 2019)

Winter 2018

TIFR

- Created robust scripts for parsing nuclear values from raw datasets to standardize a vast number of known nuclei

TECHNICAL PROJECTS

Simple Email Client

Spring 2019

Guide: Prof. Kameswari Chebrolu | Course Project (Computer Networks Lab)

IIT Bombay

- Implemented POP3 email protocol between multiple clients and server supporting simultaneous message exchanges

Simple Network Management Protocol

Spring 2019

Guide: Prof. Ashwin Gumaste | Course Project (Digital Logic Design Lab)

IIT Bombay

- Simulated working of SNMP manager to handle multiple agents via GET/ SET requests while employing Abstract Syntax Notation One (ASN.1) data types to decide packet format

Secure Personal Cloud

Autumn 2018

Guide: Prof. Soumen Chakraborty | Course Project (Software Systems Lab)

IIT Bombay

- Implemented a cloud based file storing system for Linux system with block level customizable file encryption schema allowing multiple clients to decrypt their data at real time simultaneously or share the same
- Developed a bash interface along with a web client for an interactive user experience

Quarter to Sixth Sense

Summer 2018

Institute Technical Summer Project | Electronics and Robotics Club

IIT Bombay

- Remodeled a wearable gesture interface by programming color tracking algorithms that perform functions in correspondence with hand gestures by recognizing the color markers on fingers

Wireless Game Console

Summer 2018

Institute Technical Summer Project | Electronics and Robotics Club

IIT Bombay

- Prototyped a remote with air mouse capability which recognizes its relative change in orientation and position in 2D plane using a gyroscope and IP algorithms on a PiCamera

Rumor -A social application

Summer 2018

Seasons of Code | Web and Coding Club

IIT Bombay

- Built an android app which broadcast rumours (messages) from one user to all users connected on the P2P network allowing each user to save, discard or share rumours by a single swipe

Twitter Simulation

Autumn 2018

Guide: Prof. Amitabh Sanyal | Course Project (Abstractions and Paradigms for Programming)

IIT Bombay

- Programmed an alternative version of Twitter under functional programming paradigm
- Devised an object-oriented abstraction to handle password authenticated database of every account

SAT Solver

Autumn 2018

Guide: Prof. Amitabha Sanyal | Course Project (Abstractions and Paradigms for Programming)

IIT Bombay

- Implemented the **Davis-Putnam-Logemann-Loveland** (DPLL) procedure, a SAT solving method in Racket

TECHNICAL SKILLS

Programming

C++, Python, Java, Sed, Awk, Bash, Racket, VHDL

Web Development

HTML, CSS, JavaScript, Django

Software

MATLAB, GNU Octave, Android Studio, L^AT_EX, AutoCAD, GNU Radio, Wireshark

POSITIONS OF RESPONSIBILITY

Teaching Assistant

Autumn 2018

PH107 - Quantum Physics and its Applications under Prof. S. Mahapatra

IIT Bombay

- Responsible for conducting weekly tutorials for a batch of 50 freshmen to help them with concepts
- Coordinated with the Physics Department to conduct regular tutorial sessions and evaluate term papers

Competitions Admin Coordinator, Mood Indigo

Autumn 2018

Asia's largest College Cultural festival

IIT Bombay

- Led a team of 50 convenors and allotted them relevant work related to planning and execution of events
- Contacted renowned artists and 50+ colleges to invite them for competing in 10+ competitions

Academic Resource Facilitator

Summer 2018

International Junior Science Olympiad cell

HBCSE

- Student facilitator for mentoring and evaluating top 35 students from India at Junior Science OCSC 2018
- Monitored and mentored the students to help them get acquainted with experimental skills