Ranveer Aggarwal
Computer Science & Engineering
Indian Institute of Technology Bombay

120050020
UG Third Year (B.Tech.)
Male
DOB: 20-02-1995

Examination	University	Institute	Year	CPI / %
Graduation	IIT Bombay	IIT Bombay	2015	7.11
Intermediate/+2	CBSE	Lady Anusuya Singhania Educational Academy	2012	92.80
Matriculation	CBSE	Hem Sheela Model School	2010	9.60

Achievements

- Bagged the **first position** at both institute-level and a three-month long accelerator program, *code.fun.do 2014*, a hackathon cum accelerator program by Microsoft IDC.
- Achieved **third position** out of 250+ teams at *Hackcon '14*, the national inter-collegiate hacking contest organised by Microsoft
- Participated in the *software for social cause* competition at the 2014 Inter-IIT Technical Meet, where IIT Bombay stood **third overall**.
- Stood **first** in *autonomous line follower* robotics competition for freshmen
- Secured **third** position in XLR8, an RC Car building competition among over 100 teams
- Stood **second** in *remote-controlled football-playing bot* making competition, XLR8-II
- Attained an **All India Rank of 104** (*State Rank 2*) among 3.75 lakh participants in *National Level Science Talent Search Examination (NSTSE) 2012*
- Secured **All India Rank 1** in *International Olympiad of Science (IOS) 2009*
- Achieved an **All India Rank of 53** (*State Rank 1*) in *National Science Olympiad (NSO) 2008* amongst nearly 4 lakh participants
- Pursuing minor in Industrial Design and honours in Computer Science

Key Academic Projects

E-Learning Academy (Bodhitree) **Summer 2014**

Guide: Prof. Kameswari Chebrolu

- Improved the existing web-platform built in Django, based on the flipped-classroom model that promotes student-centred learning, collaboration and improves content accessibility
- Analysed user behaviour through data-logging and optimised the existing codebase
- Currently under use by 10,000+ teachers and students in the country

2D Simulation of an Orrery **Spring 2014**

Guide: Prof. Parag Chaudhari

- Graphically simulated a mechanical model of Solar System using gears instead of gravity
- Used **Box2D** as the core engine for interaction between mechanical components
- Programmed in C++ and developed collaboratively in a team of 3 using version control

VHDL Based Monorail Controller **Spring 2014**

Guide: Prof. Ashwin Gumaste

- Implemented a Monorail controller in VHDL which was interfaced with Spartan FPGA
- Developed a Finite State Machine (FSM) for the simplified Monorail controller system
- Minimised commute time by careful selection of state transition conditions

Artificial Intelligence for Abstract Strategy Board Games **Spring 2013**

Guide: Prof. Amitabha Sanyal

- Developed a one player chess game in PLT Scheme using in-built GUI Toolkit in DrRacket
- Implemented the **Minimax Algorithm** with **Alpha-Beta Pruning** in the AI
- Utilised heuristics that ensured smooth gameplay till a tree-depth of 3

Paddle Ball Game **Autumn 2012**

Guide: Prof. Abhiram Ranade

- Designed the classic brick breaker game in C++ using **Particle Physics**
- Modelled randomly generating levels with varying difficulty and ball speeds

Other Coding Projects

Classroom Note Maker (Kapi) **Spring 2014**
Microsoft code.fun.do

- Innovated an app that, along with normal text, typesets maths in LaTeX format
- Worked in a team of 4 to program a parser that functions by recursively breaking down the LaTeX chunks into smaller components and parsing them at the token level.
- Installed an HTML canvas facilitating users to draw diagrams and graphs

Android Desktop Controller **Summer 2013**
Institute Technical Summer Project (ITSP)

- Developed an application that enables an Android device to act as a Bluetooth-based virtual hardware interface to a PC (Windows/Linux)
- Used Java's **Robot** class to assign PC's commands to strings passed over Bluetooth

Professional Experience

Product Development Intern **Summer 2014**
Trumplab

- Co-developed a web-application (*Textslate*) that provides simple, user-friendly tools enabling teachers communicate better with both students and their parents
- Currently being tested across 5 schools in Mumbai

Programming Skills

- **Languages: C++, Java**, MIT-Scheme, **Python**, Prolog, LaTeX 2_ε, MIPS-Assembly
- **Hardware Languages:** VHDL, Verilog
- **Web Development:** HTML5, CSS3, PHP, JavaScript, Django
- **Engineering Softwares:** MATLAB, SCILAB, LabView

Positions of responsibility

Manager, *Web and Coding Club*, IIT Bombay **April 2014 – Present**

- Leading a two-tier team consisting of 9 co-ordinators to encourage programming as a hobby rather than just a tool for academic aid
- Incorporating new events in the club's agenda to increase participation in open source, promoting algorithmic programming as a sport and help people develop software better
- Organised Google I/O Extended 2014 Mumbai which saw a footfall of over 170
- Mentored 15 freshmen teams under Institute Technical Summer Projects out of which 9 successfully completed their projects and 3 came up with prototypes

Web Secretary, *Hostel 3*, IIT Bombay **April 2013 – March 2014**

- Conducted intra-hostel web development workshops and competitions
- Designed and maintained the hostel website, ensuring transparency of all hostel council activities and monetary transactions

Extra Co-Curricular Activities

- A FOSS contributor, familiar with working on large codebases (like Firefox)
- Developed an application, titled *Rumor Roll!* in php using Yahoo! Boss API and YQL that outputs rumours related to the given query at Yahoo! HackU 2013.
- Built a JavaScript based game, *Fission*, on the lines of popular game, Chain Reaction
- Mentored several freshmen teams at Scratch Day 2013, IIT Bombay
- Participated in several speaking events, including **MUNs**, **debates** and **extempores**
- Completed the year-long course by **National Sports Organization (NSO)** in **Squash**
- Enthusiastic in swimming and water adventure sports

Salient Courses Undertaken

Database and Information Systems*, Computer Graphics*, Computer Networks*, Computer Architecture*, Operating Systems*, Compilers*, Artificial Intelligence*, Implementation of Programming Languages*, Data Structures, Abstractions and Paradigms in Programming, Software Systems, Design and Analysis of Algorithms, Logic Design, Computer Programming and Utilization, Discrete Mathematics, Human Computer Interactive Design, Technology and Animation*

`* marked courses will be completed by April 2015`