



Rahul Varshneya
Computer Science & Engineering
Indian Institute of Technology, Bombay

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UG Second Year
Male
DOB: 25.05.1992

Examination	University	Institute	Year	CPI / %
Graduation	IIT Bombay	IIT Bombay	2010	9.66
Intermediate/+2	C.B.S.E	D.A.V Public School, Kota	2009	92.60
Matriculation	C.B.S.E	D.A.V Public School, Kota	2007	95.60

ACADEMIC ACHIEVEMENTS:

- Secured **All India Rank 23** in **IIT Joint Entrance Examination (2009)** out of about 4 lakh students.
- Secured **All India Rank 79, State Rank 10** in **AIEEE (2009)** out of about 10 lakh students.
- Awarded **NTS (National Talent Search) Scholarship (2008)** by National Council of Educational Research and Training (NCERT). This is a program to identify and nurture talented students.
- Awarded **Certificate of Merit (Top 35 candidates Nation-wide)** for attending the **Indian National Astronomy Olympiad Orientation and Selection Camp (Senior category)** (April 27 – May 16 2009) conducted by Homi Bhabha Center for Science Education (HBCSE).
- Awarded **Certificate of Merit** for being placed in **National top 1%** students (out of 34707 candidates) in **National Standard Examination in Physics (2008-09)** by Indian Association of Physics Teachers.
- Awarded **Certificate of Merit** on the basis of performance in **National Standard Examination in Chemistry** conducted by Indian Association of Chemistry Teachers & HBCSE (2008).
- Secured **All India Rank 3** in the **2nd International Mathematics Olympiad (2009)** conducted by Science Olympiad Foundation.
- Secured **All India Rank (AIR) 10** (10th NSO - 2008) and **AIR 82** (9th NSO - 2007) in **National Science Olympiad** conducted by Science Olympiad Foundation.
- Achieved **Rank 1 (National Level)** in **D.A.V. Talent Search Scholarship Examination (2006)** conducted by D.A.V. Center for Creative Education.
- Secured **98% marks** in **National Mathematics Olympiad Contest (2007)** conducted by Delhi Association of Mathematics Teachers.
- Currently **ranked 4th** (based on CPI) in **Computer Science and Engineering Department, IIT Bombay**.
- Awarded **Certificate of Merit** for being among the **top 0.1%** of successful candidates of All India Secondary School Examination -2007 in **Mathematics** by Central Board of Secondary Education.
- Secured All India Rank (AIR) **27** (2006) and **AIR 51** (2007) in **National Level Science Talent Search Examination** conducted by Unified Council.
- Cleared first round of **Kishore Vaigyanik Protsahan Yojana (KVPY)** scheme (2007-08). This is to encourage talented students towards career in sciences.

PROJECTS:

- **Image Steganography (Summer Project – 2010):**
Guide – Web and Coding Club (WnCC), IIT Bombay.
 - Securely Hiding data (text or image) in image files, for use in covert communications of sensitive data, through **user friendly GUI** (functional programming language, **PLT-Scheme**).
 - Implemented – **Cryptography** (RSA encryption), **Color to Grayscale conversion**, **Noise reduction and Edge detection** in images (Canny edge detection), **Bi-level thresholding**, **Least Significant Bit (LSB) insertion** for coding information in pixels of an image.
 - Demonstrated the project to IIT Bombay Professors and students.

➤ **Data Compression and Decompression (Course Project – spring 2010):**

Guide – Prof. Amitabh Sanyal, CSE Department, IIT Bombay.

- Functional programming (in **PLT Scheme**) for **Lossless Compression** of Text-Files using **Adaptive Huffman Encoding** technique.
- Implemented an optimal combination of **vectors and binary trees** for representation and manipulation of text-data (Vitter's algorithm). Achieved **data compression ratio** of about **40-50%**.
- Developed **user friendly GUI** for easy usability of the program.

➤ **Fingerprint Recognition (Course Project – autumn 2009):**

Guide – Prof. Deepak Phatak, CSE Department, IIT Bombay.

- Analysis of fingerprint image and extraction of characteristic features from the same which aid in unique identification of a person (C++ programming language).
- Implemented **Noise Reduction, Binarization of grayscale image, Thinning algorithm** to obtain *Thinned Ridge Map* (set of interest lines), **Minutiae detection and validation** in pre-processed fingerprint image.
- Coordinated with a team of 20 members for the same.

POSITIONS OF RESPONSIBILITY:

- Elected as **Hostel Computer Secretary (2010-11)**, (Hostel 9, IIT Bombay) to manage and coordinate the smooth functioning of hostel computer and network facilities (for about 400 students).

EXTRA CURRICULAR ACTIVITIES:

- Completed yearlong training in **Volleyball** under National Sports Organization (NSO) in IIT Bombay.
- Currently a coordinator for **Web-team of SARC** (Student Alumni Relationship Cell) IIT Bombay which takes care of the web developments of the group.
- Part of **organizing team (Tech-Connect)** in Techfest, technical festival of IIT Bombay.
- Interested in swimming and puzzle solving.

SOFTWARE & PROGRAMMING SKILLS:

- **Programming Languages** – C/C++, PLT Scheme, Java.
- **Operating Systems** – Windows and Linux (Ubuntu).
- **Web Development** – HTML, CSS, PHP, Java Script, JSP.

COURSES UNDERTAKEN:

Core:

- ❖ Computer Programming and Utilization
- ❖ Abstractions and Paradigms for Programming
- ❖ Discrete Structures*
- ❖ Data Structures and Algorithms*

Mathematics:

- ❖ Mathematics I: Calculus.
- ❖ Mathematics II: Linear Algebra & Differential Equations.
- ❖ Data Analysis and Interpretation.

Others:

- ❖ Engineering Graphics and Drawing.
- ❖ Modern Physics.
- ❖ Economics.
- ❖ Experimentation and Measurements Laboratory*
- ❖ Introduction to Electrical and Electronic Circuits.*
- ❖ Environmental Studies: Science and Engineering.*
- ❖ Marketing Management.*

* - (pursuing) To be completed by December 2010.