



Aditya Vikram Singh Bhadoria
Electrical Engineering
Indian Institute of Technology, Bombay
Specialization: Communication & Signal Processing

08D07019
UG Fourth Year (Dual Degree)
Male
DOB: 22/09/1990

Examination	University	Institute	Year	CPI / %
Graduation	IIT Bombay	IIT Bombay	2011	7.78 (on scale of 10)
Intermediate/+2	MPBSE	Gwalior Public School	2007	87.88
Matriculation	MPBSE	Gwalior Public School	2005	79.80

Academic Qualifications

- Secured All India Rank among Top 300 out of 400000 students appeared in **IIT-JEE** 2008 i.e among top 0.1 % students across the country.
- Was among Top 1500 out of 900000 students appeared in **AIEEE** (All India Engineering Entrance Examination) 2008 organized by CBSE.
- Awarded the Top Most Category in school Eight times and got Special mention in **Mathematics** in High school.

Internships and Projects Done

Ghent University, Belgium- Summer Research Internship

[May'11-Jul'11]

Topic- Setting the Optimal Parameters in a Generalized Processor Sharing Queue

- Evaluated the **Optimal transmission rates** for delay-sensitive (voice, video etc) and delay-insensitive data packets to meet minimum delay and **Quality-of-Service** (QoS) requirements of network traffic.
- Analyzed Optimal transmission rates & their behavior by use of changing arrival rates with power series approximations for discrete-time Queueing system with two parallel queues and one processor.
- Identified **Pa'des approximation** as the best choice to explain the behavior, complexity of optimal transmission rates and their effects on minimization of **overall delay function** for GPS.

Indian Institute of Management, Ahmedabad- Winter Internship

[Dec'10-Jan'11]

Topic- Analysis of Sojourn Time Distribution among Priority Queues in different Networks

- Analyzed the waiting time Distribution, their Laplace transforms and moments for low and high priority class in a priority queue.
- Examined the different inter-arrival time distribution and service time distributions along with different scheduling Policies in the Queueing systems of the form G/G/s/K.
- Surveyed the queue behavior according to different service disciplines in a FIFO queue and Processor sharing queue and both with Preemptive Resume, Non-Preemptive resume.

Circuitsutra Technologies Pvt Ltd- Summer Internship

[May'10-Jun'10]

- Analyzed the System level modeling and functional Verification using a Hardware Description language known as **SystemC** which is based on the **Object oriented programming** feature of C++.
- Worked on the Concept of simulation of concurrent processes in real time environment on integrated circuits based on System on Chip (**SoC**) designing.
- Familiarized with the concepts of System level design using Transaction level modeling (**TLM**).

Image Super Resolution

Guide: Prof. Subhasis chaudhari,EE,IIT Bombay

[Sep'11-Oct'11]

- Designed a Single-frame Super-resolution based on **Sparse signal representation** in which algorithm uses a training set to learn the fine details of an image at low resolution.
- Enforced the similarity of sparse linear representations between the low resolution and high resolution image patch pair with respect to corresponding jointly **trained dictionaries** for the low resolution and high resolution image patches.

- Developed whole Algorithm on **MATLAB** and reduced the computational cost largely by using fact that jointly learned dictionary pair is a more compact representation of the image patch pairs.

EEG and MEG signal analysis **Guide:** *Prof. V.M Gadre, EE, IIT Bombay* [Jan'10-Mar'10]

- Analyzed the weak Electrical & Magnetic signals generated in brain with the help of signal transformation in **MATLAB**.
- Interpreted the **Fourier transforms** of these signals & **Topographic maps** to determine the difference between the current activity of Normal brain and epileptic brain.

Computer Science Project **Guide:** *Prof. Abhiram Ranade, CSE, IIT Bombay* [Nov 2008]

- Implemented the **Combinatorial Game Theory** as a recursive algorithm.
- Designed the program to predict the Strategy & mathematics of two player & single player game.
- Also developed the Graphics needed for game simulation.

Important Courses Done Till Now

- **Electrical Engineering:**

Communication Networks	Communication Systems	Network security & Cryptology
Image Processing	Microprocessors	Speech Processing
Digital Signal Processing	Introduction to Nanotechnology	Error control coding
Network Theory	Signals & systems	Control systems
- **Mathematics:**

Integral and Differential calculus	Linear Algebra	Probability and Random processes
Differential Equations	Complex Analysis	
- **Courses done in other Departments:**

Computer programming and Utilization	Introduction to Renewable Energy Technologies
Introduction to micro and macro Economics	Environmental Engineering

Software Skills

- Computer Languages : C++, Basic JAVA
- Operating System : Linux, Microsoft Windows
- HDL & Simulation languages : Verilog, SystemC, MATLAB, Spice, Scilab, 8085 assembly language
- Designing and Packages : HTML, Adobe photoshop, Visual Basic, MS Office, Mathematica

Positions of Responsibility

- **Maintenance Councilor Hostel 7** [2010-11]
 - Working on the allocation & use of Hostel funds for Maintenance purpose of the Hostel.
 - Proposed Renovation plans for Hostel & get them implemented with proper coordination with the Institute authorities.
- Held the post of '**Maintenance Secretary**' in Hostel & coordinated with the Hostel [2009-10] council on various issues regarding maintenance.
- Was a *coordinator* [2009] and *Organizer* [2008] in Marketing department of **MOOD INDIGO** (Asia's largest cultural festival) held at IIT Bombay.
- Assisted as a *coordinator* in **Lecture Series** department of **Techfest** [2010] & also as an *Organizer* in **ENDURO**(a robotics competition) held during **Techfest**[2009](IIT Bombay's technical festival).

Extra Curricular activities

- Volunteered in 'Phonathon 09' organized by **Student Alumni Relation Cell (SARC)** at IIT Bombay.
- Received **Special Mention** in Performing Arts Festival'10.
- Attended a 8 week long workshop on **Intellectual Property Rights** organized by **Shailesh J. Mehta school of Management, IIT Bombay** covering Patents, Copyrights, Drafting & related procedures.
- Participated in Inter hostel Sports & Cross country Races.