



SatyaPrakash Pareek
Electrical Engineering
Indian Institute of Technology, Bombay
Specialization: Communication & Signal Processing

07D07030
Dual Degree (B.Tech+M.Tech.)
Male
DOB: 9 Oct 1989

Examination	University	Institute	Year	CPI / %
Graduation	IIT Bombay	IIT Bombay	2012	9.13
Intermediate/+2	Rajasthan Board	Maa Bharti Vidhya Mandir	2007	93.38
Matriculation	Rajasthan Board	Adarsh Vidhya Mandir	2005	92.83

SCHOLASTIC DISTINCTIONS

- **Department Rank 1** – Communication and Signal Processing
- Completed a **Minor** degree in Computer Science and Engineering
- Awarded **AP grade** for exceptional performance in the “Speech Processing” course [‘10]
- Honored with **Undergraduate Research Award** in the field of Digital Signal Processing [‘09]
- Recipient of **gold medal** by Rajasthan Council of Mathematics for best performance in HSC exam [‘07]
- Certificate Courses: Advanced C++ Programming and **Intellectual Property Rights** [‘09 and ‘10]
- Invited by Mumbai University for a seminar to train professors to Wavelet Transform and applications [‘11]

INDUSTRIAL EXPOSURE

AUTOMATIC EXTRACTION OF NEW PROTEINS FROM PROTEOMIC IMAGES [Jan '11 - Apr '11]

Joint Project of IIT Bombay and Bhabha Atomic Research Center (BARC)

- Developed a tool to remove noise in proteomic images and to automate extraction of **new proteins**
- Conducted comparative analysis of existing wavelet methods; established superiority of non separable wavelets
- Achieved a **10% increment** in the number of proteins extracted by employing non separable sub-sampling

GPS ENABLED TRACKER FOR PREVENTION OF FUEL THEFT

[Dec '11 - Jan '10]

Smart Signals Pvt Ltd, Mumbai, India

- Integrated a GPS module with fuel sensors to communicate the sudden drop in fuel level via SMS
- Designed an **automatically calibrating** plug and play circuit for various types of fuel tanks

SOCIAL UNDERTAKINGS

GREEN YATRA

[Jul '11 - Present]

NGO for protection and conservation of environment

- Core Group Member of a team which organized 7 km Marathon in Mumbai for **environment awareness**
- Conceptualized initiatives *Name the Tree*, *Eco-Games* and *Green Bag* which were **implemented** in the national educative effort *Go Green Kids*
- Managing tie ups with schools, NGOs and corporations for effective execution of *Go Green Kids*

NATIONAL PROGRAM FOR TECHNOLOGY ENHANCED LEARNING (NPTEL)

[May '11 - Jul '11]

- Volunteered to scribe lecture notes and **conceptualized** evaluation quizzes, tutorials and programming assignments for free online video course *Wavelets and Multi-rate Signal Processing*

NATIONAL SERVICE SCHEME (NSS)

[Jul '07 - Apr '08]

- Demonstrated experiments to explain various scientific phenomenon to **over 100** children of rural areas
- Volunteered in **cloth collection drive** in campus; distributed clothes among slum dwellers near IIT

KEY ACADEMIC PROJECTS

SENSITIVITY ENCODING FOR FAST MRI

[Aug '10 - Nov '10]

Image Processing Project

- Employed low density sampling grid to obtain high resolution images from **low cost sensors**
- **Reduced scan time by 67%** in MRI by implementing a sensitivity based encoding scheme
- Reconstructed artifact free MR images independent of receiver coils and slice geometry

GENERALIZATION OF WAVELETS TO 2-D AND APPLICATIONS IN BIOMETRICS

[May '11 - Present]

Dual Degree Dissertation, Guide: Prof. V.M. Gadre

- Generalized theory of multi-rate systems for **construction** of inherently 2-D non-separable wavelets
- Explored the scope of applications in which non-separable wavelets outperform separable wavelets; such as edge detection, data compression, noise removal and iris segmentation
- Applying wavelets to improve performance of iris recognition systems in **unconstrained environments**

DIGITAL AUDIO EFFECTS (DAFX)

[Feb '09 - Jul '09]

Summer Research Project, Guide: Prof. V.M. Gadre

- Generated 11 digital audio effects including **2 new effects** to simulate different acoustic environments which find application in commercial audio processors
- Co-authored a user manual detailing concepts and practical considerations in implementation of DAFX
- Received **Undergraduate Research Award (URA)** in the field of Digital Signal Processing and applications

SOURCES OF MARKET POWER

[Feb '11 - Apr '11]

Course Project: Applied Economics

- Investigated sources of market power, their influence in numerous markets; prepared a report on the findings
- Undertook the case study of Microsoft Corp. for a first-hand experience; identified **entry barriers** and other sources of control over prices in software market

POSITIONS OF RESPONSIBILITY

HOSTEL WARDEN NOMINEE

[Jul '10 - Jun '11]

- Supervised the functioning of hostel's executive body- the General Secretary and 25 council members
- Allocated budget of **INR 3,00,000** to the hostel council and conducted internal audits to ensure transparency
- Disbursed **INR19,00,000** from Alumni Mess Workers Incentive Fund among hostel mess workers, one of the two hostels to do so

HOSTEL CULTURAL COUNCILOR

[Apr '09 - Mar '10]

- Led team of 10 secretaries for planning and execution of cultural activities managing budget of **INR 1,00,000**
- Organized workshops across 7 genres as preparatory events for inter-hostel cultural general championship; efforts led to **award winning performances** in 4 of them
- Introduced activities like Face Painting, Gaming Night, Bonfire to promote social interaction among inmates; **reinstated hostel magazine '7 Ages'** after 15 years

DEPARTMENT ACADEMIC MENTOR

[Aug '10 - Apr '11]

- Mentored a group of third year students on a one-to-one basis to help them **clear their backlogs** and improve their academic standing
- Counseled 15 sophomores; assisted them to integrate with the academic life in the department

INTER-DISCIPLINARY COURSES

- | | |
|--|--------------------------------|
| • Applied Economics | • Probabilistic Models |
| • Probability and Stochastic Processes | • First Course in Optimization |
| • Data Interpretation and Analysis | • Renewable Energy Sources |
| • Sound and Camera | • Social Ethics |

EXTRA CURRICULAR ACTIVITIES

- Amateur **poet** (Hindi) and **blogger**; Sent entries to Kavya Sandhya – inter hostel poetry competition
- Performed in award winning inter hostel Main Dramatics General Championship ['09]
- **Performing Arts Festival Special Mention** for two consecutive years ['09 and '10]
- **Hostel Cultural Special Mention** for outstanding contribution in hostel cultural activities ['09]
- Part of team **Arc of Infinity** to make world's longest Graffiti scroll at IIT Bombay [Nov '09]
- Other Interests: Trekking, Table Tennis, Badminton