



Sandipan Bala
Mechanical Engineering
Indian Institute of Technology Bombay

130100075
UG Third Year (B.Tech)
Male
DOB: 07-04-1996

Education	Institute/School	CPI/%
Graduation	IIT Bombay	9.05 (Mechanical Courses)
Intermediate/+2	Vidyadham Junior College	97.40
Marticulation	Bharatiya Vidya Bhavan's, Hyderabad	10.00

Research/Teaching Experience

Research Intern, Rakshak Foundation (May-July 2015)

- Co-authored a **Research Paper** with the title, "Making India a Technical Education Superpower" approved by **Shri. M.K.Kaw**, Former Secretary, Ministry of Human Resource Development. The paper is currently under review.
- **Analysed** the existing conditions in the Technical Education in India pertaining to education standards in terms of autonomy, funding and Governmental influence with respect to other countries in the world.
- Undertook **extensive literature review** and **surveys** to **suggest recommendations** to its autonomous functioning, improvements in faculty standards, use of information and communication technology and industry academia interaction.
- **Interviewed** and **consulted** Directors from IIT-Delhi, IIIT-Delhi, AMITY University, Journalists and social activists, Chief Advisor of Quality Council of India (QCI), Education Head of Confederation of Industry, Directors of All India Council for Technical Education (AICTE) and a few IAS officers to get their views on the proposal.

Teaching Assistant, Introduction to Biology (BB101) (July 2015-Present)

- Selected as a teaching assistant for Biology course based on **exemplary performance in 1st year**.
- Mentoring a batch of 40 students and helping them in understanding the subject and solving problems and assisting in evaluation and grading.

Key Academic Projects

Creating Stability Lobes Diagrams (July 2015-Present)

Guide: Prof. Ramesh Singh

Mechanical Engineering Dept., IIT Bombay

- To obtain the stability lobes diagram for various materials and tools and generate a MATLAB code to solve the equations obtained from the regenerative chatter theory making a simpler plug and play process.
- To perform experiments, check for variations from theoretical data and simulate the differences in softwares such as ANSYS, ATENA etc.
- Complete a research paper suggesting improvements in types of tool and machining practices to obtain larger depths of cuts with increased machining speeds.

Mini-Project in Mechatronics (May-June 2014)

Central Institute of Tool Design (C.I.T.D.)

Hyderabad

- Aimed to understand the various aspects of Mechatronics such as **Hydraulics, Pneumatics** and **PLC Programming**.
- Applied the basics to complete an automated pneumatic controlled project using the PLC Circuits and the software **STEP-7 Lite**.

Miniature Solar Pump Model (November 2009)

Technothon

Techniche-IIT Guwahati

- Developed a **miniature model** of a pump which runs on solar power and understood the various aspects of its real-life application, cost effectiveness and efficiency.

- Secured **All India Rank 5** for effective application of concepts and functionality of the model.
- **Designing of a Graph Plotting Application in C++** **(October 2013)**
Guide: Prof. Supratim Biswas **CSE Department, IIT Bombay**
 - Implemented Object Oriented Programming in **SimpleCPP**, a package of C++ with Graphics.
 - Developed a graph plotter which could plot various **algebraic, trigonometric and hyperbolic** functions and also **finds roots of complicated functions** using Newton-Raphson method

Scholastic Achievements

- Received a **Semester Point Index (SPI)** of **9.22** in my previous semester.
- Received an **AP (Academic Proficiency) Grade** for exceptional performance in **Introduction to Numerical Analysis**.
- Awarded the prestigious **Kishore Vaigyanik Protsahan Yojana (KVPY)** under the umbrella of **IISC** and Department of Science and Technology, Government of India (2013)
- Recipient of the **National Talent Search Examination (NTSE) Scholarship** conducted by **NCERT** (2009)
- **Meritus Scholarship by HDFC Bank**: Received **Cash Award** and Certificate (2009)
- Awarded the **Kulapati K. M. Munshi Award in Mathematics** during the **International Congress of Mathematicians (ICM)** held in Hyderabad (2011)
- **Science Olympiad Foundation (SOF), New Delhi :**
 International Mathematics Olympiad: **International Rank 4** and **377** in 2008 and 2009 respectively.
 National Science Olympiad: Secured **AIR 220** in 2011.
- **Computer Literacy Foundation (CLF), New Delhi :**
 International Informatics Olympiad: **International Rank 89** and **229** in 2009 and 2010 respectively.

Positions of Responsibility

- **Department Academic Mentor** **(March 2015 - Present)**
 - Mentoring a group of **11 Sophomores** of Mechanical Engineering Department and helping them sort out their academic-related issues such as **course difficulties** and providing a **link to the Professors**.
 - Specifically helping **three students to clear their back-logs** and help them cope up with the current pace of teaching.
- **Co-ordinator, Mood Indigo (BB101)** **(July 2014 – Dec 2014)**
 - Worked as a Coordinator in the Informals and Ambiance department of Mood Indigo, Asia's largest Cultural College Festival.
 - Led a team of over 15 organizers to ideate and execute the Casino Night event which saw the participation of over 1000 people.

Key Courses Undertaken

Mechanical Department	General Institute Courses
1. Thermodynamics & Heat Transfer*	1. Calculus, Linear Algebra and Differential Equations**
2. Fluid Mechanics (Theory+Lab**)	2. Computer Programming and Utilization (C++)
3. Solid Mechanics & Strength of Materials** (Theory+Lab)	3. Modern Physics
4. Mechanical Measurements	4. Biology**
5. Microprocessors and Automation Controls*	5. Electricity and Magnetism and Electrical Circuits
6. Manufacturing Processes	6. Introduction to Numerical Analysis**
7. Engineering Metallurgy	7. Economics & Psychology*

*Courses currently running this semester

**Received an AA/AP Grade

Technical Skills

Programming Languages & Operating Systems: C/C++, HTML, Windows, Linux

Software Packages: AutoCAD, Solid Works, CNC Programming, MATLAB, STEP 7 Lite, LATEX, ANSYS, MS Office

Extra-Curricular Activities

- **Music**

1. Played the background score (on piano) for the play 'Saudade' that went on to win **3rd prize** in **Main Dramatics General Championship** and also went on to perform the same at **National Centre for Performing Arts (NCPA)**, Mumbai. (2014)
2. Won **1st prize** in '**Freshiezza Band**' event in both Indian and Western genres. (2013)
3. Finished within **Top 10** of '**Freshie Idol**' singing competition held in the institute. (2013)

- **Quizzing**

1. Stood **3rd** in Hyderabad City Finals of **Times NIE Fundamental Quiz** (2011)
2. Achieved **4th position** in the Hyderabad City Finals of **T.I.M.E. Aqua Regia**, certified by **Guinness Book of World Records** as the largest Science Quiz ever (2010)
3. Secured **7th** place in **Intra-College Sports Quiz** held by **Litzkreig**, Literary Arts Club of IIT Bombay (2014)

- **Other Activities**

1. **First-team member** of the Hostel's Football Team to play in the **Inter-Hostel Football General Championship (GC)**
2. Designed a **Remote Controlled bot** that travels different terrains for **XLR8**, conducted by **STAB-IITB** (2013)