

Swati Agrawal

4th year Undergraduate – Aerospace Engineering Dual Degree (B. Tech + M. Tech)

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Institute	Board	Education	Performance	Remarks
IIT Bombay	B. Tech + M. Tech	6 semesters of education (B. Tech + M. Tech Programme)	7.8/10	Aerospace Engineering
Prince Senior Secondary School, Sikar	Rajasthan Board of Secondary Education, Ajmer	Senior Secondary (12th)	90%	27 th Merit in Rajasthan State
Adarsh Vidya Mandir School, Sikar	Rajasthan Board of Secondary Education, Ajmer	Intermediate (10th)	91%	26 th Merit in Rajasthan State

SCHOLASTIC ACHIEVEMENTS:

- Received **IIT Bombay Heritage Fund Scholarship (2009-10)** for nice overall performance.
- Received the prestigious “**GARGI PURASKAR**” by State **Government of Rajasthan** for Academic Excellence on state level.
- Secured **AA** grade in all HSS Courses (including **Economics , Organizational behavior and Implications of management .& Philosophy**) and in minor course of **Introduction to Industrial Design**.
- Secured 11th position in “**State level Scholarship Examination**”.
- Have successfully attained the **NSE certification** in Financial Markets (**NCFM**).
- All India Rank 89 (among top 1% students) and **State Rank 25** among more than 900,000 students in **All India Engineering Entrance Examination (AIEEE) 2008** .
- Ranked **4th** in RPET-2007 (Rajasthan Pre Engineering Test) among more than 500,000 students.

POSITION OF RESPONSIBILITY:

Institute Girls’ Sports Nominee (2011-12), IIT Bombay:

- Currently a member of Institute Sports Council, 2011-12. Responsible for planning and execution of sports events for girls at institute level.
- Coordinating between Hostel Sports Council and Institute secretaries for various sports.

Internship Coordinator (2010-11)-Practical Training Cell, IIT Bombay:

- Was a member of the 2nd core team of Practical Training Cell of IIT Bombay which is responsible for providing internship opportunities of all the second and third year students (about 700+600 students) .
- Involved in building and sustaining relations with companies, universities and social organizations to recruit students of IIT Bombay for internships and research opportunities.
- Coordinating the conduction of talks, interviews and other selection processes according to companies.

Hostel Sports Secretary (2009-10)- Represented hostel in sports and responsible for conduction of sports events.

Member of “Udaan” (2009-11) a school out reach program supported by Aerospace Engineering Department of IITB to create awareness of Aeronautical Engineering amongst school students.

Coordinator Entrepreneurship CELL (2010) in Public Relations and Media & Marketing Department responsible for proper publicity and conceptualization of events.

Coordinator TechFest (2010) in Marketing Department handling a company.

PROJECTS:

1.) **SUMMER INTERNSHIP-2011: AIRBUS-EADS India by PT Cell 2011:**

- Analyzed the data from the FMS Simulation tool and based on that developed a methodology for precision analysis for sensitivity of respective tool.
- Coded the algorithm in JAVA for precision loss analysis.

2.) **SUMMER INTERNSHIP-2010:UPM Malaysia** (Guided by Prof Harijono Djodjohardijo) **by PT Cell 2010:**

- **Matlab Modeling and Simulation of a satellite for orbit change**, Simulate the Path of satellite, calculated essential initial parameters for acquiring the desired orbit and other conditions by solving Differential Equations.
- Comparison between methods of modeling for relative motion of satellites.

3.) **B.Tech Project** (Guided by Prof Ashok Joshi, Aerospace Engineering Department, IIT Bombay, Autumn 2011):

- Studied Linear- Quadratic Gaussian optimal control for noise reduction in the system.
- Application of LQG in different formations formed by Airplanes.

4.) **MEMS** (Guided by Prof A. M. Pradeep, Aerospace Engineering Department, IIT Bombay ;Autumn 09):

- Analysis of MICROELECTRONIC MECHANICAL SENSORS for measurement of Wall Shear Stress .
- Suggested some improvements in present models.

5.) **Controls System Design** (Guided by Prof A Joshi, Aerospace Engineering): Designed a **PID** controller for a 4th order combination of rigid + elastic body for 1% steady state error and less than 2 sec settling time and convert that unstable system into a stable one.

6.) **Office Management Program C++** (Guided By Prof. A. Ranade , CSE Dept., IIT Bombay; Autumn 08):

It was the popular software which is used in many companies to store the database of their employees. The program stores the personal profile like name, age, address of employees and it also keeps the data of holidays and calculates salary according to their number of leaves.

7.) **Flight Mechanics of Birds** (Guided by Prof. K Sudhakar, Aerospace Engineering Department, IITB Spring 09): Analyzed Flight Mechanics of Bird flight and aerodynamics behind that, Explained it by mathematical model.

8.) **Eureka Project (Autumn 2008):** Presented a Business Plan Analyzing Stakeholders, market and concept of product about providing services to households via telephones or net in **EUREKA which is Asia's largest business plan competition.**

9.) **Security Device Design Project**(Guided By Prof. H. Arya, Prof A. Mujumdar, Prof. K. Sudhakar , Aerospace Engineering Department, IIT Bombay; Autumn 09):

Designed a security device analysing Stake holders, Operational scenarios, Operational Requirements, Functional analysis, Concept Generation, Concept evaluation and Prototype.

EXTRA CURRICULAR ACTIVITIES:

SPORTS:

- Part of Basketball Team representing IIT Bombay in **Inter IIT Sports Meet** for three consecutively years (**2008 2009 & 2010**).Was awarded **Silver Medal in 2008 (after a long drought of 6 years) and won the Overall Girls Championship Trophy.**
- Secured 3rd position at **State Level TT** tournaments in year 2004-05 and represented school in District level **Kho-Kho tournament** (2004).
- Got **Sports Color (2010)** and **special mention(2009)** for excellence in sports.

- Secured **1st** position in **Cross Country** General Championship & **5th** position in **Triathlon** (2009).
- Represented Hostel and won in **Kho-Kho (Captain)**, Athletics, Throw ball, Tug of war General Championship.

JOURNALISM:

Was in Editor panel of EnSpace , wrote many articles about entrepreneurship.

CULTURAL ACTIVITIES:

- Secured **3rd** position in JAM competition & represented hostel in **Debating** General championship.
- Was a part of Hindi and English Music band which secured **2nd** position in Freshizza event.
- Performed as an artist in dramatics and fine arts in **Performance Arts Festival 2009**.

TECHNICAL ACHIEVEMENTS:

- Secured **4th** position in **Tech Quiz** competition in the batch of **650** students.
- Conceptualized and designed a **wireless miniature car** with a good degree of water resistance capable of climbing a low incline and overcoming certain obstacles on a track which got **11th** position.
- Was a part of team represented hostel in **Technical General Championship** (2009) which secured **4th** position.

Key Courses Completed:

- **Core Courses:** Smart Materials & Structures, Optimization for Engineering Design, Aircraft Design, State Space Method for Controls, Vibration Control, Spacecraft Mechanics, Heat Transfer, Propulsion, Flight Mechanics, Aircraft structures, Fluid Mechanics, , Controls Theory ,Solid Mechanics, Thermodynamics, Electrical and Electronic circuits for Aerospace and Civil Engineering, Modeling and Simulation, Propulsion lab, Aerodynamics, Controls Lab, Structures lab.
- **Other Courses:** Data Analysis and Interpretation, Economics, Engineering Design, Computer Programming and Utilization – C++, Philosophy , Introduction to Industrial Design, Indian Culture and Tradition.
- **Mathematical Courses:** Differential Equations, Linear Algebra, Numerical Analysis, Calculus.

TECHNICAL SKILLS:

Programming Language : C, C++, MATLAB, JAVA.

Softwares: Matlab, AME SIM, LabView.