



Sushant Agarwal  
Aerospace Engineering  
Indian Institute of Technology, Bombay

09D01023  
UG Fourth Year (Dual Degree)  
Male  
DOB: 08th Sept 1991

Examination	University	Institute	Year	CPI / %
Graduation	IIT Bombay	IIT Bombay	2012	8.34
Intermediate/+2	CBSE	Maheswari Public School	2009	93.20
Matriculation	CBSE	Mayoor School	2007	90.00

#### SCHOLASTIC ACHIEVEMENTS

- Secured **State Rank 4** and Awarded the 'Whiz-Kid medal' in the **National Cyber Olympiad**
- Awarded the **Brilliant Student Medal** in the All Rajasthan Dainik Bhaskar Talent Scholarship exam
- Completed the **Minor program** in the School of **Management**, IIT Bombay – with courses on 'Marketing', 'Operations', 'Human Resource Management', 'Project Management' and 'Information Systems'

#### POSITIONS OF RESPONSIBILITY

##### MANAGER (EVENTS), TECHFEST 2012

(April '11 – Jan'12)

Asia's Largest Science and Technology Festival, Patronized by UNESCO

(Budget: INR 13.0 million, Footfall: 92,000)

- Led a 2 tier team of **100** students to execute 'Pro shows' showcased to a crowd of over **30,000**
- Administered a shoestring budget of **INR 2.5 million** for successful execution of events featuring more than **30 international artists** from **8 different countries**, all performing for the first time in India
- Generated a sponsorship amount of **INR 2 million** by affiliating with **foreign embassies and consulates**
- Organized an International Level Robotics Challenge, inviting participation from renowned international universities in **Australia, Thailand and Sri Lanka**

##### Key Initiatives

- Conceptualized "WAVE" a **3000 km road campaign** by Swiss electric cars to promote green fuels; coordinated with 10 membered foreign contingent and 80 membered student team for its execution
- Spearheaded a **first-of-its-kind** competition in India - Social Buzz - in which participants chose and executed their green ideas and conveyed their ideas to larger audience through online social media tools
- Worked with **NGOs** and experts from academia to conceptualize "Earth", a techno-entrepreneurial competition, in which over **100 innovative ideas** for environmental problems

##### AEROMODELLING CLUB MANAGER

(July '10 – April'11)

##### Initiatives

- Pioneered flying sessions to teach remote controlled plane flying to the students in the institute
- Successfully organized talks, handson sessions & games, mentored students to promote aeromodelling
- Led to a substantial **70% increase** in aeromodelling competitions held in the institute

##### Flight Simulator setup

- Designed and developed a **prototype** of the simulator, bringing about substantial **cost reduction**
- The project was exhibited in Techconnect, the exhibition for showcase of R&D of IITB

##### Zephyr, department festival of Aerospace Department

- Coordinated with the Zephyr team to organize talk by Mr. Grant Calverley from Skymill Energy Inc, USA

**Was awarded Department Person of the Year award for organizational achievements as club manager**

#### SOFTWARE SKILLS

**Toolsets:** MS Access, SQL for *database management*; MS Project for *project management*; MATLAB, Simulink, Scilab for *modeling and simulation*; ANSYS for *structural analysis* LATEX for *typesetting*; SolidWorks, SketchUp for *3D CAD*;

**Programming:** C, C++, PL/SQL, Visual Basic, Python, PERL, JAVA

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## SUMMER INTERNSHIP

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### DATA QUALITY ASSESSMENT, UNIVERSITY OF CAMBRIDGE

(May '12 – July '12)

*Research project at DAIL, IfM on Data Quality of Organization Databases, a Boeing sponsored Project*

- Successfully prepared a framework showing **DQ assessment methods** for different DQ problems considering the suitability for different data types with the logical sequence to apply the techniques
- Demonstrated the framework through **scripts in Perl and Talend** (open source data profiling tool)
- Developed an automated framework in **JAVA** through which data quality problems could be resolved

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## TECHNICAL PROJECTS

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### DIELECTRIC ELASTOMERS AS ACTUATORS | UNDERGRADUATE THESIS

(July '12 – ongoing)

*Project Guide: Prof. Mira Mitra*

- Studied various stress strain models for different types of electroactive polymer
- Simulated the models with electromechanical coupling in **Ansys Parametric Design Language**
- Analyzing commercially available EAP's and the methods to fabricate the polymers
- Investigating the benefits of real life applications of the polymers as MEMS actuators

### EXPERIMENTAL MODELING OF SERVO MOTORS

(Jan '12 – Apr '12)

*Project Guide: Prof. Hemendra Arya*

- Analyzed hysteresis, dead zone and backlash of different servo motors through experimentation
- Performed dynamic tests to study the behavior with loading and variable frequency PWM
- Successfully integrated miniature load cell to load the servo and modeled the changes

### SIMULATION OF NON LINEAR DYNAMICS OF WING ROCK

(Jan '11 – Apr '11)

*Project Guide: Prof. Ashok Joshi*

- Analyzed the nonlinear behavior of delta wing aircrafts at high angle of attacks to model the roll motion
- Successfully simulated the roll oscillations in MATLAB by solving nonlinear differential equations
- Extrapolated the experimental behavior to predict the roll oscillations at adverse angles of attacks

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## OTHER PROJECTS

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### GP WIDE ANALYSIS OF PIPED WATER SCHEMES IN THEMBRE

(July '12 –Nov '12)

*Centre for Technology Alternatives for Rural Areas (CTARA) project under supervision of Prof. Puru Kulkarni*

- Studied the drinking water problems of 12 habitations of the Thembre Gram Panchayat
  - Collaborated with **Disha Kendra** to eradicate the wrong social beliefs related to drinking water
  - Prepared a **SWOT Analysis** report of scheme with suggestions for sustainability of the schemes
  - Surveyed, recorded and prepared a database along with **geo-tagging** of drinking water sources
- The report would be used by Zila Parishad to ascertain water shortage problems in the habitations**

### MARKETING ANALYSIS OF TATA MOTORS

(Oct '11 –Nov '11)

*Marketing Management course project under supervision of Prof. Dinesh Sharma*

- Studied SWOT, PEST analysis, Marketing Mix strategies to get an insight of the marketing strategies
- On the basis of Segmentation, Targeting and Positioning of passenger vehicles concluded the study by showing need of a crossover product between a Sedan and SUV to increase the market

### DESIGN PROCESS FOR A MULTI-FUNCTION PEN

(July '11 –Nov '11)

*Engineering design course project under supervision of Prof. Sudhakar and Prof. Mujumdar*

- Successfully applied Quality function deployment(**QFD**) to transform user demands into design qualities
- Led a 6 membered team to conceptualize the design on the basis of needs and requirements

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## EXTRA-CURRICULAR ACTIVITIES

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- Made an autonomous line follower robot capable of navigating by detecting lines on the path
- Achieved 1<sup>st</sup> position in the Inter School Orchestra competition and like to play Hawaiian guitar
- Represented the hostel in various Technical Inter Hostel General Championships