



## SAGAR LADDHA

4<sup>th</sup> year Dual Degree

Dept. of Energy Science & Engineering

Roll No.: 08D17014

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DOB: April 29, 1991

Sex: Male

EXAMINATION	UNIVERSITY	INSTITUTE	YEAR	CPI/%
Graduation	IIT Bombay	IIT Bombay	2011	7.23
Intermediate/+2	CBSE	Central Academy	2008	85.40
Matriculation	SSC	Golden Kids	2006	86.70

## INTERNSHIPS & WORK EXPERIENCE

### TATA CONSULTANCY SERVICES LTD., Mumbai

(May '11 – July '11)

*Assessing the performance of retail chains using Data Envelopment Analysis (DEA)*

- Studied the retail market and identified all the input, output and demographic parameters influencing the performance of the retail chains
- Gauged the performance of over 900 retail outlets based on their relative efficiencies using the method of DEA and divided them into two categories – inefficient and 100% efficient outlets
- Evaluated the relative efficiencies of 35 different departments of an outlet for various outlets of the same retail chain and determined the target sales and transactions for that department
- Based on the principle of network DEA, formulated the strategy for optimizing the space allotted to each department of a specific outlet to maximize its relative efficiency

## POSITIONS OF RESPONSIBILITY

### MANAGER, TECHFEST

(March '10 – January '11)

- Responsible for the infrastructure setup and requirements of over 150 events of Techfest'11 covering a budget of more than INR 5 million
- Directing a two tier team consisting of over 30 Coordinators and 100 Organizers working for the Infrastructure Department of Techfest'11
- Developed a unique concept, 'India Unmute' which is a nationwide campaign, revoking patriotism among youth of India and encouraging the determination to work for the nation
- Pioneered *Techconnect*, to bridge the gap between Academia, Industries and Visitors by showcasing 80 IITB research projects before 50 corporate clients
- Conceptualized an initiative 'Utkarsh' for the development of rural and agricultural technologies

### HOSTEL MESS SECRETARY

(July '09 – April '10)

- Managed the mess budget of INR 4.8 million of my hostel, consisting of 338 inmates
- Organized 3 Gala dinners during my tenure which were hugely appreciated by the inmates
- Honored with Organizational 'Special Mention' for the outstanding functioning of the mess and for my active involvement in organizing various hostel activities

### MANAGER, EVENTS & ACCOUNTS, HELIOS '12

(Aug '11 – Till date)

- Founding member of *Energy Science & Engineering Department's* inaugural technical festival
- Responsible for conceptualization and execution of various events to be held in Helios'12
- Responsible for managing accounts and budget of the festival

## TECHNICAL SKILLS

Operating Systems	: Windows, Linux
Modelling & Analysis	: MATLAB, Mathematica, SolidWorks
Programming	: C/C++

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## KEY ACADEMIC PROJECTS

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### GRAVITY DRIVEN TRANSPORT SYSTEM FOR SHORT DISTANCES

(July '11 – Nov '11)

*Innovation Lab Project*

*Guide: Prof. Chetan Solanki*

- Fabricated a two-man cart prototype running on an 15m long inclined rail track, with hand pedals and brakes for speed control, and a lift mechanism with turning platform to elevate it onto the track
- Simulated a traffic management system model for the IIT Bombay campus in *MATLAB* that incorporated distances between bus stops and optimized track inclinations accordingly

### MATHEMATICAL MODELLING OF DIESEL ENGINE

(July '11 – Nov '11)

*Energy Systems Modelling & Analysis, Course Project*

*Guide: Prof. Rangan Banerjee*

- Analyzed and studied different types of mathematical models for various processes like combustion, transmission involved in the IC engine systems
- Developed a model in *MATLAB* to calculate performance parameters of diesel engine like torque, pressure, brake power in three phases – Kinematic Analysis, Thermodynamic Analysis and Dynamic Analysis
- Verified the results by determining the values of these parameters using Willan's line analysis

### INTELLECTUAL PROPERTY RIGHTS

(Jan '10 – April '10)

*Certification Course from Shailesh J. Mehta School of Management, IIT Bombay*

- Understanding the legal elements of intellectual property, such as trademarks, patents, copyrights and trade- secrets through structured case studies
- Examining mechanisms for protection of intellectual property including procedures for filling patent and copyrights applications

### IR REMOTE & MOBILE PHONE CONTROLLED MASTER SWITCH

(Jan '10 – April '10)

*Electronics, Course Project*

*Guide: Prof. Rajesh Gupta*

- Designed and constructed an electronic switch circuit for household electronic appliances
- Infrared remote (within radius of 5 m) as well as mobile phone were used to operate the appliance

### PERFORMANCE ANALYSIS OF DIESEL ENGINE

(May '09 – July '09)

*Summer Internship Project*

*Guide: Prof. Anuradda Ganesh*

- Studied and analyzed the performance parameters of Cummins Diesel Engine, using vegetable oil as an alternate fuel
- Observed the effects on the engine of running it for 500 hours on vegetable oil instead of diesel in the audit undertaken by Cummins India Ltd.

### SOLAR-POWERED AIR COOLER

(Jan '09 – April '09)

*Energy Engineering Fundamentals, Course Project*

*Guide: Prof. Rangan Banerjee*

- Powered by a 10W(output) solar cell, it cooled air without changing its humidity
- Constructed using household materials like aluminum rods, earthen pot inspired by the concept of heat exchange taking place in the condenser

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## EXTRA-CURRICULAR ACTIVITIES

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### CHIEF ELECTION OFFICER

(March '11 – Aug '11)

- Successfully conducted fair elections for two consecutive terms for electing the complete hostel council of 25 members

### PERFORMING ARTS FESTIVAL

(Jan '11 – March '11)

- In-charge of stage production for the Performing Arts Festival, which won 1<sup>st</sup> prize for the stage production and overall 2<sup>nd</sup> prize in PAF
- Was awarded PAF Color for the overall commitment and contribution towards PAF

### SPORTS

- Captain of the Silver winning Hostel Water Polo team in the inter-hostel general championship
- Participated in *Swimathon* '09 and swam continuously for 4 hours, covering 7 km