Shrenik Bothra   09D17015

Energy Systems Engineering   UG Third Year(Dual Degree)

Indian Institute of Technology, Bombay   Male

DOB: 18/3/1990

Examination	University	Institute	Year	CPI / %
Graduation	IIT Bombay	IIT Bombay	2012	7.18
Intermediate/+2	H.S.C Board	New English Jr College	2008	81.16
Matriculation	S.S.C Board	Saraswati Vidyalaya	2006	85.86

Objective: To obtain a position that will enhance my analytical skills, improve my application of learned concepts and ability to work with people.

Projects

CTARA Supervised Learning project   **[Aug 2011- ongoing]**
Advisor: Prof. Bakul Rao (IIT Bombay)
- Studied the composition of municipal solid waste produced in Karjat at Raigad district.
- Estimated the **feasibility of installation of biogas plant** in Karjat Municipal Corporation.
- Estimated the amount of **Certified Emission Reduction (CERs)**, **quantity of methane produced**, **payback period** and various other parameters from Bio-Methanation plant.

Horizontal Axis Wind Turbine (HAWT): Design and Structural Analysis   **[Aug-Nov 2011]**
Advisor: Prof. Shirish Kedare (IIT Bombay)
- Designed a **38m HAWT using NACA 4415** as airfoil for rotor blades
- Analyzed **tensile and shear stress** due to various forces at different points of rotor blades.

Solar street lighting system   **[Jan-Apr 2010]**
Advisor: Prof. Rangan Banerjee (IIT Bombay)
- Made a **model of solar street light** which had the technique of automatic switching of lights.
- Designed the circuit and the functioning of the device.
- Designed the system and analyzed the performance parameters of the system.

Finger print detection and its application (C++)   **[Aug-Nov 2010]**
Advisor: Prof. Deepak B Phatak (IIT Bombay)
- Made an **algorithm to match the input fingerprint** with the stored fingerprint and this algorithm would return a percentage match.
- Algorithm was implemented in **unique identification device (UID)** which is used for taking class attendance.
- **Led the team of five students** to make and implement the algorithm in UID.

Remote operated switch   **[Jan-Apr 2011]**
Advisor: Prof. Rajesh Gupta
- Made remote operated switch which can be used for switching purposes from a distance of 3m.
- Implemented **desired switching** in the remote.

Academic Achievements

- Secured All India Rank **951 out** of **4,00,000** students in IIT JEE 2009
- Secured All India Rank **1495 out** of **8,00,000** students in AIEEE 2009
- Obtained **2nd position** in S.S.C board of Maharashtra out of 60 students in class X.

Technical Activities

Industrial visit to TATA Power Plant Trombay   **[Jan-Apr 2011]**
Advisor: Prof. Rangan Banerjee (IIT Bombay)
- Analyzed the working of the general coal based Power Plant and some of its performance parameters.
- Learned how plant used the waste heat to increase the efficiency from 37 to 50 %

Intellectual property rights workshop   **[Aug-Nov 2010]**
- Participated in the workshop of six weekends on Intellectual property rights fundamentals.
- Learned how to patent and copyright the new techniques and devices.

Wireless remote controlled car   **[Aug-Nov 2009]**
- Designed the wooden body of car.
- Car won the best design award in F1 competition. This competition was for the freshmen of IIT Bombay.

Studied the electricity distribution and water supply system of IIT Bombay   **[Jan-April 2010]**
Advisor: Prof. Rangan Banerjee (IIT Bombay)

Made the presentation on nuclear energy and its hazards   **[Jan-April 2010]**
Advisor: Prof. Rangan Banerjee (IIT Bombay)

Courses and lab Undertaken

Energy courses
- Introduction to renewable energy
- Electrical energy systems
- Power generation & System planning
- Waste to heat
- Utilization of Solar Thermal Energy
- Solar Energy lab
- Energy systems lab
- Material science for energy applications
- Wind Energy Conversion Systems

Electrical and Electronics courses
- Basic electrical Engineering
- Power electronics & Machines
- Electrical Energy Systems
- Electrical machines & power electronics lab
- Power Generation and System Planning
- Electronics

Mechanical Courses
- Thermodynamics & Energy conversion
- Heat and mass transfer
- IC Engine and Combustion Lab
- Combustion Engineering
- Fluid mechanics
- Equipment design & Control

Other courses
- Calculus
- Computer programming
- Engineering graphics & Drawing
- Linear algebra
- Data analysis & interpretation
- Introduction to numerical analysis
- Economics
- Differential Equation

Software skills

Programming language: C, C++, HTML, Java, Elementary VBA

Software: Sequel, Mathematica, MATLAB, Scilab, MS Office, Adobe Photoshop, LaTex.

Operating system: Windows, Linux, Mac OS

Position of Responsibility

Co-founder and Manager of HELIOS   **[Technical festival of Energy Department]**
- Currently involved in designing, conceptualizing and publicizing the competitions, workshops and exhibitions for the festival

Co-ordinator of Mood indigo 2010   **[Cultural festival of IIT Bombay]**

Organizer of Techfest 2010   **[Technical festival of IIT Bombay]**
- Conducted the all India quiz competition, astronomy quiz.
- Managed the raw materials required for the infrastructure of various events.

Extra-Curricular
- Made a short film of 7 minutes titled "DRUGS DOSTI ETC" which won **2nd position in Freshizaa** 2009
- Avid interest in lawn tennis, table tennis, badminton, swimming, chess, puzzles,documentaries.