Aakash Jhaveri **09D17006**
Energy Systems Engineering **UG Third Year(Dual Degree)**
Indian Institute of Technology, Bombay **Male**
Specialization: Energy Systems Engineering **DOB: 23-10-1991**

Examination	University	Institute	Year	CPI / %
Graduation	IIT Bombay	IIT Bombay	2011	9.58
Intermediate/+2	Maharashtra State Board	K.C.College	2009	90.17

Academic Achievements:

- Ranked **1st** in the Department of Energy Science and Engineering, IIT-Bombay. (*2009-present)*
- Received the **Institute Academic Award** at IIT Bombay for the academic year 2010-11, having maintained a Semester Performance Index **(SPI) of 10.0 for both the semesters** in the year. (*2011*)
- Secured an **All India Rank of 191** at the All India Engineering Entrance Examination (AIEEE), out of 1,000,000 students. (*2009)*
- Awarded **Certificates of Merit** by the Indian Association of Physics Teachers **(**IAPT**)** and the Indian Association of Chemistry Teachers (IACT**)** for being placed in the **National Top 1% in the National Standard Examinations in Physics and Chemistry**. (*2009)*
- Awarded **Certificates for Distinction in Maths and Science** by **The University of New South Wales** on the basis of worldwide tests by their Educational Testing Centre (ETC). (*2001)*

Summer Research Internship: *(May-Jul 2011)*

- At: The **Solar Energy and Building Physics Laboratory** (LESO-PB) at the **Swiss Federal Institute of Technology** in Lausanne (EPFL).
- Topic: Computer Simulations of Advanced Day-lighting Systems.
- *Guides* - Dr. Jerome Kaempf and Prof. Jean-Louis Scartezzini.
  - Set up a **virtual gonio-photometer** based on radiance software, using backward ray-tracing. Used it to simulate and assess parameters of day-light for various room models at various locations on the earth.
  - Verified the Bi-directional Transmission Distribution Functions (BTDF's) rendered by radiance, by comparing with the BTDF's obtained experimentally by the **gonio-photometer** at LESO-PB.
  - Visualised and plotted **BTDF photometric solids** (directional light intensity polygons) for different materials being tested at the laboratory, using virtual candle-light sources.

Summer Internship Project: *(May-Aug 2010)*

- At: The **National Solar Thermal Power Testing, Simulation and Research Facility**, IIT Bombay.
- Topic: Development of Mounting Structures for Flexible Mounting of a Solar Collector Field.
- *Guides* - Prof. J. K. Nayak and Prof. Rangan Banerjee.
  - Designed a rotatable platform to separately and interchangeably mount **2** standard Parabolic Trough Collectors (**PTC**'s) or **4** (**one half module**) standard Compact Linear Fresnel Reflectors (**CLFR**'s).
  - Optimised the platform size for testing both, especially the CLFR's with respect to different collector positions, to help model the whole module effectively.

Academic Projects:

- ***Working Model*** of an **Energy Efficient House** *(Feb-Apr 2010)*
  - *Guiding Professor*-Prof. Rangan Banerjee
  - Estimated the **energy and water usage pattern** for a small cottage.
  - Optimised roof area for mounting **solar photovoltaic panels** and storage type **solar water heaters**.
  - Made and exhaustively tested a model, with **appropriate storage** for night consumption.
  - Deduced system parameters for a scaled up version, including centralised wind farms for colonies.

- ***Software*** for **Unique Identification (UID)** based on biometrics *(Sep-Nov 2009)*
  - *Guiding Professor*-Prof. D. B. Phatak
  - Part of a team of 20 students to develop software that scans fingerprints, records them according to different categories and recognizes fingerprints if they have already been fed or scanned once.
  - Lead a sub-team of 6 students who wrote part of the code that compared a freshly scanned fingerprint with other existing ones, and found its match by minute detail identification **(minutia matching).**

- ***Circuit Model*** for an **Automated and Digitized Multi-Level Car Parking System** *(Feb-Apr 2011)*
  - *Guiding Professor*-Prof. Rajesh Gupta
  - Used a Micro-controller, optical sensors, and basic Logic IC's to realize the circuit.
  - Optimised the micro-controller code to ease traffic flow and coded a stepper motor for use as a lift.
  - Provided two modes, completely automated and user controlled parking spot selection.

Positions of Responsibility:

- **Student Mentor-Department Academic Mentorship Programme**, IIT Bombay *(2011-present)*
  - Counselling and guiding juniors of the department who have difficulty adjusting to the course-load.
  - Part of the Curriculum-review team of the department, which suggests changes to the course-structure and curriculum, based on student and faculty feedback.
- **Organiser-Front Stage-Nokia Indiafest** *(2011)*
  - Selected from among the best event organisers in India, on the basis of work done at Mood Indigo 2010, to work with **Channel-V India**, for organising India's largest inter-college festival held in Goa.
- **Co-ordinator-Mood Indigo (**Cultural festival of IIT-Bombay**)** *(2010)*
  - Co-ordinated with 20 organisers to conduct the Institute Treasure Hunt and the first ever Poker tournament, with 500 participants.

Computer proficiency:

- **C, C++** and **Java** Programming Languages, **LT Spice** and **TINA** Electronic Circuit Simulators.
- **Radiance** Architectural Modelling and Day-lighting Software.
- **AutoCAD** and **CATIA** Engineering Design Software, **Sci lab** and **Mat lab** Computing Software.

Co-curricular and Extra-curricular Activities:

- Assessed the **Water Pumping** and **Electricity Distribution** systems of **IIT-Bombay** and also visited the 1300MW **Tata Power Plant** in Trombay, to study its working. *(Mar 2010)*
- Demonstrated **solar cooking** to batch mates using **different types of solar cookers,** namely Box, Scheffler and Parabolic dish, with special care of their limitations. *(Jan 2010)*
- Led the House march past team of 250 students to win the March-Past Shield, as School House Captain.
- Enthusiastic about Athletics and Cultural Events. Won running races, quizzes (regional level), elocution competitions and mono-acting competitions at school.

Important Courses Taken:

- **Energy**-Introduction to Energy Engg, Introduction to Renewable Energy Technologies, Introduction to Nuclear Engg, Environmental Modelling, Equipment Design and Control, Power Generation and Systems Planning *, Material Science for Energy Applications, Energy Systems (L), Solar Energy (L) *
- **Electrical**-Electrical Energy Systems *, Ana log Electronics, Power Electronics, Machines, Electronics, Electrical Machines and Power (L), Electronics (L), Basic Electrical Engg (L).
- **Mechanical**-Combustion Engineering *, Fluid Mechanics, Heat and Mass Transfer, Thermodynamics, Thermal and Fluid Engineering (L), IC Engine and Combustion (L) *.
- **Others**-Economics, Psychology, Operations Management, Accounting and Finance.

** Marked courses end next semester, April 2012.* *(L) Marked courses are Laboratory courses.*