



Arnesh Sukumar
Chemical Engineering
Indian Institute of Technology Bombay
Specialization: Chemical Engineering

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UG Second Year
Male
DOB: 14-02-1997

Examination	University	Institute	Year	CPI / %
Graduation	IIT Bombay	IIT Bombay	2016	7.57
Intermediate/+2	AISSCE / CBSE	Maharishi Int Res School	2014	97.20
Matriculation	AISSE / CBSE	Maharishi Int Res School	2012	10.00

INTERESTS

Nanotechnology:

- Learnt the basics of Nanotechnology and Nano-indentation and found it extremely interesting

Mathematical Modelling:

- Completed a course on MATLAB and found it extremely useful and interesting especially simulations
- Enthusiastic about problem-solving and creating algorithms that help in solving real life problems

SCHOLASTIC ACHIEVEMENTS

- Secured **AIR 1122(top 0.75%)** in JEE(Advanced) out of nearly 0.15 million students [2014]
- Achieved **99.88** percentile in JEE(Main) out of nearly 1.4 million students [2014]
- Awarded **KVPY Fellowship** with an **AIR 181** out of **10000+** students who appeared from across the country on the basis of performance in a written test and an interview [2013]
- Secured **State Rank 1** in Joint Entrance Exam (Architecture) of 0.15 million students [2014]
- Acquired a position in the **top 1%** of **TN state** in **NSEP** (National Standard Exam in Physics) [2013]
- Shortlisted for Indian National Astronomy Olympiad Level-2 and AMTI level-2 (grade 9,10,12)
- Qualified for **INSPIRE scholarship** based on performance in class 12 (top 0.1% of country) [2014]
- Currently pursuing a **minor degree in Design** from Industrial Design Centre
- Obtained **full marks in Mathematics** in the CBSE class 12 Examination [2014]

TECHNICAL PROJECTS

CLASSROOM FOR ALL | Defining the design parameters for a perfect classroom

Guide: Prof. G G Ray, Prof. N Sadhu (IDC course project – Design) [July '15 – November '15]

- Analyzed and Redesigned the classroom doors** so that they are more comfortable to utilize and Evaluated features to be added such as Temperature Modulation, Sliding Doors, Biometric etc.
- Proposed a **near-perfect design** of an ideal classroom that can **accommodate all kinds of people** especially considering the problems faced by people with disabilities
- Developed the set of **design parameters and features** to be included in the ideal classroom for **visually-challenged students** as a part of the overall project coordinating with a team of **5 members**

NANO-INDENTATION OF HUMAN HAIR | Nano-indentation cosmetic-applied male/female Human hair

Guide: Prof. Prita Pant (Metallurgy and Material Science) [May '15 – June '15]

- Performed **Nano-indentation on Human hair** considering **Gender and Cosmetics applied**
- Nano-indentation is the process of indenting Nano-sized holes in a material to determine its **material properties** by measuring its hardness and the force applied on it.
- Handled and operated the Nano Indenter and learnt the basics of nano-indentation
- Evaluated the **hardness of the hair samples** by keeping variables such as age almost constant

BIO-SYNTH | Producing biodiesel from an autonomous biodiesel producing unit at institute level

Guide: Prof. Sanjay Mahajani (Chemical Engineering) [May '15 – June '15]

- Learnt about **Bio-diesel** and did literature reading on water-washing and glycerolysis
- Experimented with a few changes in the procedure of **water-washing and distillation**
- Made a presentation using of **graphical analysis** that stood out from the rest
- Selected for the **future Biosynth batch** and coordinating with a team of 21 students

GRAPHING SCIENTIFIC CALCULATOR | Coded a Graphing Scientific Calculator using C++

Guide: Prof. Deepak Phatak, Prof. Supratik C (Computer Science) [August '15 – November '15]

- Ideated and developed an algorithm for the **graphing scientific calculator**
- Programmed the functions, **coded the parsing in C++** in a 4 membered team
- Created the user interface using **graphics.h, SimpleCPP** and **GTK** graphical packages for **C++**

NATIONAL CHILDREN'S SCIENCE CONGRESS | Attempted to provide a solution for the lack of farming land

Guide: Dr. Mohana Radhika (Biology) [October '10]

- Learnt about the village near our school and also about its farms and their cultivation methods
- Studied hydroponics and suggested a method to implement it at a low cost in villages
- Constructed a model of hydroponics in google earth and presented the same to a panel of judges

TECHNICAL SKILLS

- **Programming languages:** C++, Python, C, SQL, HTML, CSS
- **Tools and Software:** MATLAB, AutoCAD, MS Office, SolidWorks, Illustrator, Photoshop

KEY COURSES

- **Chemical Engineering** – Introduction to Chemical Engineering, Transport Phenomena, Thermodynamics*, Heat transfer*, Process Fluid Mechanics*, Process Plant Simulation*
- **Computer Science** – Computer Programming and Utilization, Computational Methods Lab
- **Mathematics/Statistics** – Calculus, Linear Algebra, Differential Equations (I & II), Numerical Analysis, Introduction to Data Analysis*
- **Introductory Courses** – Quantum Mechanics, Electricity and Magnetism, Biology, Economics*, Ergonomics, Philosophy
- **Other Courses** – Bio-Sensors and Bio-MEMS*

EXPERIENCE

OPERATIONS INTERN | CR2 Technologies Ltd. (Product – Medbox) [December '15]

- Created a presentation on the **App flow** and **UI enhancements** and presented it to the Tech team
- Compared the app with other competitors and suggested **few changes and additions to the product**
- Prepared a **comprehensive analysis** of around 1200 calls and presented it to the Management

POSITIONS OF RESPONSIBILITY

CONVENER | Institute Aquatics Club, IITB [May '15-Present]

- Managing the institute aquatics team by **coordinating practice sessions** and other events

HORIZONS COORDINATOR | Mood Indigo 2015 [March '15 – December '15]

- **Negotiated** with artists from **around the world** to organize **10+ events** with a team of **20+ organizers**; conceptualized and ideated **food-fest**, bringing a cultural dimension to food

MESS COMMITTEE HEAD | Maharishi International Residential School [June '12 - January '14]

- Decided **every month's menu** with the committee considering the requests and complaints of the students constrained to an **annual budget of around 180 million INR**, serving around **2500 people**

SCHOOL PUPIL LEADER | Maharishi International Residential School [June '12 – March '13]

EXTRA CURRICULAR ACHIEVEMENTS

Aquatics:

- Selected as a part of the **Inter IIT Aquatics Camp 2014** and **Institute Water Polo Team 2015**
- Came **Fourth** in **Individual Medley** and **Third** in **Water Polo** in a nation-wide Aquatics Meet [2015]
- Won **silver** in the **Medley relay** in swimming General Championships [2015]
- Placed **4th** in all IITB students in **Swimathon** (Swam **20.5 km** in **12 continuous hours**) [2015]

Other:

- Fluency in **English**, working proficiency in **French**, elementary proficiency in **German**
- Participated in the Remote Control Plane and bot making competitions held in IIT Bombay
- Represented school as a part of **Swimming, Volleyball** and **Throwball(Captain)** teams