



Unmil Hulke
Mechanical Engineering
Indian Institute of Technology, Bombay
Specialization: Computer Aided Design (CAD) & Automation

09D10020
UG Third Year(Dual Degree)
Male
DOB: 29-09-1991

Examination	University	Institute	Year	CPI / %
Graduation	IIT Bombay	IIT Bombay	2012	7.32
Intermediate/+2	Maharashtra State Board	Shivaji Science College	2009	91.67
Matriculation	Maharashtra State Board	Somalwar High School	2007	91.23

SCHOLASTIC ACHIEVEMENTS

IIT JEE 2009	AIR 2496 out of 0.4 million students appeared.
CBSE AIEEE 2009	Percentile of 99.71 out of 0.7 million students appeared.
NSEP and NSEA , 2009	Was in top 1% students in the nation in National Standard Examination in Physics and Astronomy conducted by Indian Association of Physics Teachers and qualified for the 2nd level of National Physics Olympiad and National Astronomy Olympiad , 2009.
National Mathematics Talent Contest, 2008	Secured All India Rank 14 in the National Mathematics Talent Contest (NMTCT) , 2008 conducted by All India Mathematics Teachers of India (AMTI), Chennai.
NTSE Scholar	Was in the top 750 students from all over India who cleared all levels of the National Talent Search Exam 2007 (NTSE) conducted by NCERT, Delhi and was awarded Scholarship
National Science Olympiads	Secured AIR 154 and 291 in 10th and 7th National Science Olympiad respectively.
Australian National Chemistry Quiz	Was awarded Higher Distinction in the Australian National Chemistry Quiz conducted by Royal Australian Chemical Institute, Australia.

SUMMER INTERNSHIP

Bajaj Auto Limited, Pune (May- June, 2011)

- **Productivity optimization** in cylinder head machining by **reduction of idle time and loading unloading time**. Observed the working style of the operators and based on the observations, suggested an automatic chip cleaning mechanism which has been now implemented.
- **Designed a Low Cost Automation** in a CNC Robodrill for oil hole cleaning in crank case machining. Suggested a mechanism that uses no external forces to work.

PROJECTS UNDERTAKEN

Bus Rapid Transit Vehicle Design (Aug 2011- Nov 2011)	Under the guidance of Prof. Vedagiri (Department of Civil Engineering, IIT Bombay): Identified the various aspects of a BRT system and its need. Studied the various design and planning issues in a BRT system. Studied the BRT system in different cities across the world. Possible implementation in proposed BRT system in Mumbai.
Micro-machining Tool Development (Aug 2011- Nov 2011)	Under the guidance of Prof R. K. Singh (Department of Mechanical Engg., IIT Bombay) : Studied the various aspects of micromachining and the various options available for the various components and their fabrication. Suggested improvements in order to damp the vibrations and increase accuracy.
Locomotion Interfaces in VR environments (SEMINAR)	Gave a seminar on the development of locomotion interfaces and discussed various techniques used and issues faced.

Performance of Diesel engine fuelled with Biodiesel (Dec, 2010- Jan, 2011)	Under the guidance of Prof. S. Sheshadri (Mechanical Engineering Department, IIT Bombay). Had detailed exposure to the working of an internal combustion engine , both analytically and theoretically. Tried to optimise the best proportion of jatropha and diesel that can be used in a diesel engine.
Analysing and Optimization of Material Strength for IC Engine Pistons (course project) Aug- Nov, 2010	Under the guidance of Prof. G. V. Prabhugaonkar (Metallurgical Engineering Department, IIT Bombay) Went through an extensive literature survey, at the end of which the material strength for possible materials that can be used for making Engine Pistons and Piston Rings were studied and the best material was identified.
Unique User Identification using C++ (course project) Aug- Nov, 2009	Under guidance of Prof. D B Phatak (senior faculty of CSE, IITB), made a group project for unique user identification using finger print detection to be used for general purposes of attendance, conducting MCQ etc. using C++.
Human Judgement under Uncertainty (course project) Aug- Nov, 2010	Under guidance of Prof A. Khan (Humanities and Social Sciences Department, IIT Bombay), did a theoretical study on the effect of biases and uncertainties on human judgement and gave a presentation regarding the same.

KEY COURSES UNDERTAKEN

Department Oriented Courses

- Robotics
- Applied Thermodynamics
- Thermodynamics
- Heat Transfer
- Fluid Dynamics
- Solid Mechanics
- Strength of Materials
- Engineering Mechanics
- Engineering Metallurgy
- Manufacturing Processes
- Fuels and Combustion
- Kinematics and Dynamics of Machinery
- Transport Engineering
- Rapid Product Development
- Industrial Eng. and Operational Research
- Introduction to Electrical and Electronics Engineering
- Data Analysis and Interpretation
- Manufacturing Processes Lab*
- Workshop Practice*
- Engineering Graphics and Drawing*

Other Courses: Computer Programming and Utilisation, Calculus, Linear Algebra, Differential Equations, Statistics, Economics, Human Cognitive Processes, Sociology, Introduction to Animation, Energy sources

(* courses marked with * have Lab content)

SOFTWARE SKILLS

Programming Languages :C++, HTML
 Operating Systems :Windows, Linux
 Software : MS Office, Scilab, Matlab, Sony Vegas, Sound Forge, Adobe After Effects, Adobe Flash

EXTRA-CURRICULAR

Adventure Sports	Completed the 26 day Basic Mountaineering Course from ABVIMAS, Manali
NCC	Certificate 'A' from National Cadet Corps Armed. Attended two Combined Annual Training Camps (CATC).
Swimming	Completed an yearlong course in swimming conducted by National Sports Organisation Completed 6 hrs. of continuous swimming in Swimathon, 2010.
Movie Making	Active member of Silverscreen, the Film Club of IIT Bombay. Was a part of the creative and technical crew of several short films made in the college. Secured 2 nd position in Movie making competition in Freshizza. Active participation in IIT Bombay Film Festival. Was involved in production of two short films of 30 min + length