



Nilesh Satish Kulkarni
Computer Science & Engineering
Indian Institute of Technology, Bombay
Specialization: None

110050007
UG Second Year
Male
DOB: 21/09/1993

Examination	University	Institute	Year	CPI / %
Graduation	IIT Bombay	IIT Bombay	2012	9.03
Intermediate/+2	MSBSHSE	Thakur Junior College of Science	2011	90.33
Matriculation	ICSE	Gokuldham High School	2009	96.71

AWARDS AND ACHEIVEMENTS

- Achieved an **All India Rank 77** in Joint Entrance Exam (JEE) 2011 conducted by Indian Institute of Technology among 5.5 lakhs students appeared for the examination (**Top 0.01%**)
- Achieved **All India Rank 407** in ISAT 2011 conducted by Indian Institute of Space Technology
- Selected for the Indian National Olympiads : **INPHO**(Physics), **INCHO**(Chemistry) conducted by **HBCSE (Homi Bhaba Centre of Science Education)**; Ranked among the **Top 1%** in each of these exams
- Awarded **Bronze** in Talent Search Examination (TSI) in Science
- Accomplished **Ganit Pradnya State Level Mathematics** Examination conducted Brihan Mumbai Ganit Adhyapak Mandal
- Awarded Hostel **Technical Special Mention** (2012) for significant contribution towards hostel technical Activity
- Accomplished the **Elementary** and **Intermediate** Drawing Examinations conducted by State Government

PROJECTS

- **AUVSI ROBOSUB, International Underwater Robotics competition, San Deigo, California**
Designing and developing an unmanned autonomous underwater vehicle (AUV) that localizes itself and performs realistic missions based on feedback from visual, inertial, acoustic and depth sensors using thrusters/propeller. www.auv-iitb.org
Guided By: **Prof. Dr.Hemendra Arya and Prof. Dr.Leena Vachhani** (July 2012 - ongoing)
Working under the following Sub-divisions of a **5 DOF Autonomous Underwater Vehicle Software**:
- Designing and Implementing a Debugging platform to observe and monitor the current status of the vehicle while also providing the ability to reprogram all the controllers or update its parameters from an off-board computer
- Electronics:**
- Designing the hardware Architecture for efficient use of Power and robust communication between SBC, Motion Controller Board, Sensors through various Protocols
- **GIS Contour Plotting :** (Summer-2012)
Guided By : **Prof Milind Sohoni and Prof Adsul Bharat, Department of CSE, IIT Bombay**
- Plotting **elevation contours** using sample data points obtained from **Google API** through various kriging and interpolation techniques, implementing them efficiently and analyzing the **time complexity** of different **variograms** used in **kriging**.
 - Generated **KML** files and overlaid them on **Google Earth**. The Project mainly used **Python** for kriging and variogram where as **Matlab** was used for converting the files to KML and having a **2D & 3D view of contours**
- **Institute Technical Summer Project** (Summer-2012)
- Designed and custom manufactured an **All Terrain Robot** which is capable of changing its shape and propelling through rough terrain.
 - The robot can be wirelessly controlled using a **DTMF (Dual Tone Multi-Frequency)** technology. The Robot is also known as 4-Track Robot as it has 4 arms each acting like a conveyor belt. It was displayed at the **Institute Technical Exhibition**.

➤ **Wall Follower**

- Designed an Wall Follower Robot for Asia's Largest Technical Fest TechFest-2012, IIT Bombay.
- The robot was a state of art architecture with use of PID Ranked among Top 16 Teams at the Competition.

➤ **Chinese Checkers Using PLT SCHEME**

(Spring 2011)

Guided By: **Prof. Amitabha Sanyal, Department Head, Department of CSE, IIT Bombay**

- Made the multi player board game Chinese checkers, implemented the popular **min-max** and **alpha-beta pruning** algorithms besides another algorithm designed by us for the computer player.
- Extensively used scheme graphics libraries(PLT-scheme). The Game was capable of having any number of **Human players** and remaining **Computer Players**.

➤ **SLITHER-LINK USING C++**

(Autumn-2011)

Guided By: **Prof.D.B.Phatak, Department of CSE, IIT Bombay**

- Designed a game in C++ that had a GUI interface for the user. The computer generated different Puzzles along with solutions.
- The program is capable of solving user given Puzzles.
- It is also capable of generating different **levels of puzzles** depending upon the Algorithms it uses to solve the same puzzles

SKILLS

- Programming Languages: C/C++, Python, PLT Scheme, Java, JavaScript, HTML, CSS
- Operating System: Windows, Linux
- Packages used: Eagle, Scilab, Matlab, Adobe AfterEffects
- Microcontroller Experience: Intel 8085, Atmega 32(Arduino)

EXTRA CURRICULAR ACTIVITIES

- Among **Top 30** players in **Badminton** of my Batch (selected for **National Sports Organisation (NSO)**); Represented Hostel at various sport events **Badminton, Football, Swimming**
- Awarded **PAF** (Performing Arts Festival) **Special Mention**

POSITIONS OF RESPONSIBILITY

Coordinator, Electronics Club, IIT Bombay

(2012-13)

Part of Students Technical Activity Body (STAB), Monitoring and mentoring Technical Activities all over the Institute. The body conducts sessions and lectures on Technical topics

Technical Mentor:

(2012-13)

Mentoring freshmen for their projects & Competitions over one year

OTHER INTEREST

- Was among the 937 students who solved Rubik's cube in half hour and helped create Guinness World record as well as Limca Record for IIT Bombay
- Particle Physics and Quantum Theory, Algorithm Design, Robotics

RELEVANT COURSES

Computer Science: Computer Programming and Utilization, Abstractions and Paradigms in Programming, *Data Structures and Algorithms, *Discrete Mathematics

Mathematics : Calculus, Linear Algebra, Differential Equations, Data Analysis and Interpretation

Electrical : *Basic Electronic Circuits, *Signals & Systems

Others : Modern Physics.

**To be completed by November, 2012.*