Rawal Khirodkar | **130050014**
Computer Science & Engineering | **UG Third Year (B.Tech.)**
Indian Institute of Technology Bombay | **Male**
Specialization: Computer Science | **DOB: 20/02/1995**

Examination	University	Institute	Year	CPI / %
Graduation	IIT Bombay	IIT Bombay	2016	8.62
Intermediate/+2	12th HSC	S.R Patil Science College	2013	88.83
Matriculation	10th SSC	Jubilee English High School	2011	93.45

Homepage: http://www.cse.iitb.ac.in/~rawalkhirodkar

SCHOLASTIC ACHIEVEMENTS

- Secured All India Rank **585** in **IIT-JEE Advanced (2013)**
- Qualified for **Indian National Physics (INPhO) Olympiad (2013)** (top 400 students in India) and awarded certificate of merit for being in National top 1%.
- Qualified for **National Talent Search Examination (NTSE) scholarship** (2009) by NCERT, India
- Ranked **8th in the state** for the **Maharashtra Talent Search (MTS) scholarship exam** (2010)
- Awarded **AP grade** for exceptional performance in *Differential Equations*.
- Pursuing **Minor in Mathematics** and **Honors in Computer Science**.

INTERNSHIP

- **123D Design, iOS Application Improvement** (Objective C) May-July 2015
  Company: Autodesk, Pune; Mentor: Mr. Manish Agrawal
  - Integrated **"Spatial decomposition of Mesh"** algorithms in 123D Design.
  - Added following features and improvements
    - **Fabrication of 2D layout** by slicing any 3D Model given as .obj file.
    - **Integration of Algorithm Module** "Timberline" used by Autodesk into the 123D code base using jam build.
  - 2D Layout generated by the Application acts as **an step-by-step instruction set** to again construct the 3D Model from any physical material.
  - Facilitated usage of **C++ functions dealing with Physics and Mechanics** from "Timberline" which manipulate Data Models in the application.

KEY PROJECTS

- **Universal Asynchronous Receiver/Transmitter** (Xilinx) Spring 2015
  Guide: Prof. Ashutosh Trivedi
  - Designed the UART to **receive/send data** to Microprocessor through data bus from/to a laptop.
  - Implemented it using **VHDL** and used **Tera Term** to transmit data frame by frame across **FPGA** and Computer
- **Data Mining** (Python) Autumn 2014
  Guide: Prof. Ganesh Ramakrishnan
  - Statistical analysis of **Database from Newspapers** and identification of the context of the sentences in database.
  - Used statistical concepts of **normal distribution** and **hypothesis testing** in the procedure.
- **Vehicle Simulation** (Box 2D) Autumn 2014
  Guide: Prof. Sharat Chandran
  Link: https://github.com/rawalkhirodkar/Box2D
  - Creation of **mechanical models of vehicles** using Box2D, a Physics Engine.
  - **Simulation of crash-tests** and display of minute interior mechanical working of the vehicle.

- **Web Portal Development** (Django-Python) Autumn 2014
  Guide: Prof. Sharat Chandran
  Link: https://github.com/rawalkhirodkar/Django-Based-Server
  - Development of **Web portal** accepting forms and user data with friendly user interface.
  - User **data processing** and management.
- **Event Handling, Graphics** (C++) Spring 2014
  Guide: Prof. R.K Joshi
  Link: https://github.com/rawalkhirodkar/tetris_game
  - Objective : Creation of user friendly Tetris game using FLTK graphics library in C++.
  - Practical application of **encapsulation**, **runtime memory management** , **event handling** and other programming concepts.
- **Sudoku Solver** (C++) Autumn 2013
  Prof. Supritam Biswas
  Link: https://github.com/rawalkhirodkar/SudokuSolver
  - Developed a Sudoku playing platform using "*simple cpp*' library in C++.
  - Solver uses intelligent **Back-tracking** while searching for the solution in search space.

SKILLS

- **Languages** :- C, C++, Python, SWI Prolog, Java, VHDL, Bash, Postgre SQL.
- **Web-Designing** :- HTML5, CSS, Django Framework.
- **Specialised Softwares** :- Matlab, Git, Xcode, Xilinx, Octave, Solidworks, SPIM (MIPS processor).
- **Development** :- iOS Development, Unix Development, Arduino Coding, Jam Build System.

KEY COURSES TAKEN

Parallel Computing*	Computer Networks
Machine Learning	Artificial Intelligence*
Database Management*	Computer Architecture*
Data Structures and Algorithms	Software Systems Lab
Data Analysis and Interpretation	Digital Design Logic
Group and Ring Theory*	Fourier Analysis
Design and Analysis of Algorithms	Logic for Computers
Operating Systems**	Automata Theory**

** to be completed by November 2015* *** to be completed by April 2016*

POSITIONS OF RESPONSIBILITY

Department Alumni Secretary, Computer Science & Engineering Association (Apr 2014-Apr 2015)

- Organized **sessions** on Career Issues by Distinguished Alumni benefiting many students.
- Involved in calling for **fund raising** of the Institute.

Co-ordinator, Entrepreneurship Cell IIT-Bombay (July 2014-Jan 2015)

- Member of organising team of **Eureka!** - Asia's largest B-Plan competition with 6000 entries.
- Collaborated with **Entrepreneurship and Investment Networks** as Co-ordinator.

INTERESTS

- **Competitive Coding**, **Machine Learning**, **Network Security**
- **Chess**, **Cricket**, **Swimming**