Vivek Atulkar **110050039**
Computer Science & Engineering **B.Tech.**
Indian Institute of Technology Bombay **Male**
DOB: June 11 1993

Examination	University	Institute	Year	CPI / %
Graduation	IIT Bombay	IIT Bombay	2015	6.75
Intermediate/+2	CBSE	Kendriya Vidyalaya No.1 Bhopal	2011	85.80
Matriculation	CBSE	Kendriya Vidyalaya No.1 Bhopal	2009	89.80

PROFESSIONAL EXPERIENCE

Samsung R&D Institute, Noida (May'14-July'14)

- Developed an intelligent approach to **cognitive rehabilitation and assessment** using an android application, to help people with cognitive disabilities.
- Used a **NeuroSky** headgear to track their brain activities.
- Used a hand glove with **accelerometer** and flex sensors to track their hand movements.
- Collected and analyzed the data for memory retention power and hand-eye coordination.

Technium Labs, Mumbai (May'14-July'14)

- Made a **real time multi-user chat** application for LurnQ interactive learning interface to facilitate discussion for enrolled users.
- Developed the interface such that users can create their own discussion rooms or can enter pre-existing discussion rooms.
- Used Node.js, Socket.io in back-end and HTML, CSS, JavaScript in front-end.

ACADEMIC PROJECTS

Auto-grader, E-Learning Platform (July'14 - Present)

Research and Development Project - Prof. Varsha Apte

- Developing mechanism for **auto-evaluation** of coding assignments, aimed at simplifying the lab conduction process in academic institutions.
- Integrated with MOOC (Massive Open Online Course) website to facilitate wider availability.

Tourism Planning (Autumn'13)

Database - Prof. Umesh Bellur

- Developed an integrated system for tourism planning allowing the user to plan his trip by searching tourist places, finding nearby accommodation, transport mediums and other tourist spots within a user defined radius.
- Employed Ruby-on-Rails as web-development framework, PostgreSQL Database and a map-based interactive GUI using Google-Maps.

MIPS 8-Stage Pipeline Simulator (Autumn'13)

Computer Architecture - Prof. Bernard L. Menezes

- Developed a **simulator** to visualize stepwise **execution of MIPS instructions** in an 8-stage instruction pipeline.
- Implemented the concepts of register forwarding, branching, multi-cycle instructions and memory.

Virtual Memory Simulation (Spring'14)

Operating System - Prof. Dhananjay M.Dhamdhere

- Extended base implementation of Pranali - guest Operating System to include Virtual Memory system.
- Implemented swap space management, RAM Management, memory allocation, **Page tables**, Page fault handling and **Translation Look-aside Buffer**.

Visual Representation of Abstract Data Types (Autumn'12)

Data Structures and Algorithms - Prof. Varsha Apte

- Developed an Educational Aid Program to provide step by step understanding of various functions of Abstract Data Structures - Binary tree, AVL tree, Heap.
- Used GTK+ library for animating each step of the methods - search, insertion, deletion.

Distributed File System (Autumn'13)

Computer Networks - Prof. Kameswari Chebrolu

- Implemented a **distributed file storage** and retrieval system which distributes a file across nodes using MD5 hash of the file, using socket programming in C++.

Music Box (Autumn'13)

Computer Graphics - Prof. Parag Chaudhuri

- Created a model of music box placed in a room using **OpenGL** with a humanoid dancing figure.
- Implemented **camera movement** along a Bezier curve and key-frame animation via keyboard control.

Statistical Inference (Spring '12)

Data Analysis and Interpretation - Prof Milind Sohoni

- Statistically **analyzed census data** of Mumbai sub-districts, using Scilab.
- Identified socio-economic problems of those regions using tools like linear regression, correlation, Bayesian statistics and probabilistic methods and suggested solutions for the same.

Seminars and Other Projects

- Gave seminar on **Strong AI and Chinese Room Argument** guided by Prof Pushpak Bhattacharyya.
- Developed a billiards game in **DrRacket** with AI, implemented using mini-max algorithm.
- Programmed **a mini-scheme interpreter** which works on the concept of environmental model.
- Enhanced the **Control Flow Graph Language Processor** to allow compilation of C-like features.
- Implemented **8-point radix-2 DIF Fast Fourier** Transform using Cooley-Tukey Algorithm in VHDL.
- Designed a **Rube Goldberg machine** and simulated it using Box-2D physics engine in C++.

SCHOLASTIC ACHIEVEMENTS

- Secured All India Rank **2686** out of about 0.5 million candidates in IIT-JEE 2011.
- Secured All India Rank **328** out of about 1.1 million candidates in AIEEE 2011.
- Secured All India Rank **214** out of about 0.1 million candidates in ISAT 2011.

TECHNICAL SKILLS

Languages	C++, Python, Java, Scheme, Bash, MIPS
Web Development	HTML, CSS, SQL, JavaScript, Python-Django, Node.Js, Ruby on Rails
Miscellaneous	Git, GNU Plot, Perf, Latex, Doxygen, Matlab, Scilab, PostgreSQL, MySQL

EXTRA CURRICULAR ACTIVITIES

- Completed Basic **Mountaineering** Course from ABVIMAS, Manali [reached 15,700ft high].
- Completed NSO **Swimming** and 6 hours of swimming in SWIMMATHON-2012.
- Completed Sophie Crossy, a 6 km long **Marathon** held at IIT Bombay.
- Yellow belt in **JUDO** and basic training in **Martial Arts**.
- Made a **wireless remote controlled bot** for TECH-ONE contest held at IIT Bombay.
- Pursuing **Japanese language** learning course offered at IIT Bombay.

***Homepage**: www.cse.iitb.ac.in/~vivekatulkar*