Alankar Saxena   09005021
Computer Science & Engineering   UG Third Year (B.Tech.)
Indian Institute of Technology, Bombay   Male
                                                                              DOB: 01-09-1991

Examination	University	Institute	Year	CPI / %
Graduation	IIT Bombay	IIT Bombay	2011	8.40
Intermediate/+2	CBSE	DAV Public School	2009	92.20
Matriculation	CBSE	St. Anselms School	2007	93.80

SCHOLASTIC ACHIEVEMENTS

- **ALL INDIA RANK 47** in **IIT Joint Entrance Examination(2009)** out of about 400,000 students who appeared for it.
- **ALL INDIA RANK 195** in **AIEEE (2009)** out of 1,000,000 students.
- **National Olympiads**
    - Won **gold medal and certificate of merit in INPho-2009**(Indian National Physics Olympiad) held by **Homi Bhabha Centre for Research and Education. (Top 35 in India)**.
    - Awarded **Certificate of Merits** for being placed in **National top 1%** students in **Chemistry and Astronomy National Olympiads** in 2009.
    - Qualified for the **Indian National Mathematics Olympiad** after clearing **Regional Mathematics Olympiad** (RMO) in Rajasthan region.
- Selected under the **National Initiative for Undergraduate Sciences (NIUS)** scheme for an enrichment camp of **12 days** in **Physics** by **HBCSE**.
- **All India Rank 30** in **National Science Olympiad (NSO)** in 2009 held by Science Olympiad Foundation (SOF).
- **2 lakhs scholarship** for getting **1st rank** in All India Engineering Test (2009) held by **Lovely Professional University.**

WORK EXPERIENCE

- **ITRI, Taiwan** under **Prof. Tzi-cker Chiueh**   *(Summer 2011)*
    - Worked for duration of **3 months** on the design and implementation of **Homomorphic Encryption Algorithm** for Cloud Computing Center for Mobile Application.
    - Read the paper of **Prof. Craig Gentry** on **Fully homomorphic encryption** and made an **encryption domain text retrieval system (ETRS)**.
    - With ETRS, a person can store huge amounts of encrypted data on cloud and then search on it with our text retrieval system. I used Lucene and **Advanced Encryption Standard (AES)** to achieve the required targets in the project.
    - Also worked to minimise the **cryptanalysis** and other **cryptographic attacks** on our retrieval system through various ideas related to the project.

KEY ACADEMIC PROJECTS

- **Game of ANTICHESS** in **PLT scheme language.**   *Spring-2010*
    Guide: Prof. Amitabh Sanyal   *HOD, CSE Department, IIT Bombay*
    - The game is an anti version of chess in which the one who gets his all pieces killed wins.
    - The implementation was **purely functional** and allows the user to play **against the computer**.
    - Used **minimax algorithm** along with **alpha pruning**.

- ➢ **Implementation and Analysis of Four Data Structures:** *Autumn-2010*
  Guide: Prof. O.P. Damani *CSE Department,IIT Bombay*
  - Implemented four data structures namely **Binomial Heap, AVL Tree, Splay Tree** and **Fibonacci Heap**.
  - **Space-time analysis** of all of the structures and their comparisons which is useful in order to analyze what combinations of these structures to use in various practical implementations.

- ➢ **FINGERPRINT DETECTION SOFTWARE in C++ language** *Autumn-2009*
  Guide: Dr. D.B. Phatak *CSE Department, IIT Bombay*
  - Converted a gif image of fingerprints of a person into single thin line ridges of pixels (**ridge thinning algorithm**).
  - Used the counts and relative distances between different ridge ends and ridge bifurcations to prove whether the fingerprints match (**minutia detection and comparison**).

- ➢ **EXPERIMENTATION IN QUANTUM ENTANGLEMENT** (ongoing project)
  Guide: Prof. S.M. Roy *Physics Department, TIFR, Bombay*
  - Trying to find a **joint probability function** for the **non commutating n variables** in an EPR experiment.
  - Studied **Bell inequalities** and **EPR Paradox**.

COURSES UNDERTAKEN

Computer Science:		Other Departments:
Graph Theory	Operating systems*	Numerical Analysis
Design and Analysis of Algorithms	Computer Architecture*	Calculus
Automata Theory	Database management*	Linear Algebra
Logic Design	Computer Graphics*	Differential Equations
Data Structures and Algorithms	Artificial Intelligence*	Digital Electronics*
Discrete Structures	Computer Networks*	Marketing Management
Functional Programming	Compilers*	Economics

* to be completed before April 2011.

POSITIONS OF RESPONSIBILITY

- **Assistant Contingent Leader** of IIT Bombay in Chaos (the cultural fest of IIM Ahmedabad).
- **Internship Coordinator** of Computer Science department responsible for the internships of over 1500 students.
- As the **Hostel Dance secretary** of Hostel 2, helped my hostel to **win** the Inter Hostel dance Competition and the Overall Cultural Championship.
- **Coordinator** in **Mood Indigo-2010** and **Techfest-2011**.

Extra Curricular Activities

- ➢ **Sports Activities**
  - Played at **state level** in **Under-17** category in **basketball** in **2007** in **Rajasthan.**
  - Manager and member of the **winning team** of **Institute Football League Cup** in 2011.
- ➢ **Cultural Activities**
  - **2nd position** at **Chaos-2011**(IIM Ahmedabad festival) in Mad Hot Ballroom Dance Competition.
  - Represented **IITB** at major college festivals like **Mood Indigo and Malhar** in **dance.**

COMPUTER SKILLS

- ➢ Programming Languages: - C/C++, Java, HTML, CSS, Perl, Latex, bash, PLT Scheme, VHDL, Prolog
- ➢ Web - HTML, CSS, JSP, MySQL