Aakash Rao N S   09005069

Computer Science & Engineering   UG Third Year (B.Tech.)

Indian Institute of Technology, Bombay   Male

DOB: 25-04-1992

Examination	University	Institute	Year	CPI / %
Graduation	IIT Bombay	IIT Bombay	2011	9.26
Intermediate/+2	BIE, AP	Visakha Junior College	2009	96.00
Matriculation	CBSE	Timpany Secondary School	2007	94.00

AREAS OF INTEREST

- Algorithm Design and Analysis
- Graph Theory
- Automata Theory and Logic
- Operating Systems
- Web Design, Content Development and Web Application Development

ACADEMIC ACHIEVEMENTS

- Secured **All India Rank 26** in **IIT-JEE 2009**, out of over 380,000 students
- Secured **All India Rank 11** and **State Rank 3** in **AIEEE 2009**, out of over 900,000 students, and was shortlisted for the CBSE Merit Scholarship for Professional Studies
- Awarded **3rd position** for designing a search engine for scientific papers, at **IPTSE Winter School 2010**, conducted by **Carnegie Mellon University** at IIIT Hyderabad (for UGs and graduates from all over India)
- Awarded the Institute Merit-cum-Means Scholarship, IIT Bombay

INTERNSHIP AND KEY PROJECTS

➢ **Recursive Planar Separators in Log-Space :**   [Internship, Summer 2011]
   Guided by: *Prof. Samir Datta, Chennai Mathematical Institute*
   - Worked with the guide and developed a log-space algorithm for finding a set of recursive planar separators for a planar graph, which divides the graph into components containing no greater than O($\sqrt{n}$) vertices each.

➢ **Search Engine for Research Papers :**   [Winter School, Winter 2010]
   Guided by: *Dr. Vikram Pudi, IIIT Hyderabad*
   - Designed and efficiently implemented a search engine for scientific research papers using C++, with special focus on classification of citations, and providing suggestions for related keywords and documents.
   - A hybrid indexing and ranking mechanism was used, combining ranks from the Page Rank algorithm, textual relevance (using vector space model), and metadata relevance.

➢ **Micro-simulation of Road Traffic Flow :**   [Course Project, Autumn 2010]
   Guided by: *Prof. Om P. Damani, IIT Bombay*
   - Designed and efficiently implemented a network data structure in C++ (loosely based on adjacency-list representation of a weighted directed graph) including representations for roads, junctions, vehicles and traffic lights, and functions for data collection.
   - Implemented various graph algorithms (shortest paths - time and distance based, BFT, DFT etc.) and a GUI for constructing the network and running the simulation.

➢ **Interactive 3D Rubik's Cube Solver :**   [Course Project, Spring 2009]
   Guided by: *Prof. Amitabha Sanyal, IIT Bombay*
   - The OpenGL Library in PLT Scheme was used to create a 3D Rubik's Cube (with animated rotations) which the user could rotate, modify and scramble using the keyboard.
   - The application also provided a solution to any valid configuration of the cube, which the user could follow move-by-move, step-by-step or view as a list.

➢ **Mini National UID Project :**   [Course Project, Autumn 2009]
Guided by: *Prof Deepak B. Phatak, IIT Bombay*
- ○ Team of 80 was assigned the job of designing an application for creating a database of fingerprints and personal information, and using for a practical purpose, using C++.
- ○ Was the leader of team of four, responsible for consolidating and managing the database of fingerprints and personal information.

POSITIONS OF RESPONSIBILITY

➢ **Institute Student Mentor, IIT Bombay**   [2011]
- ○ Responsible for mentoring and guiding 8 freshmen, to help them understand the challenges and opportunities at IIT Bombay and develop a smooth transition to campus life, and attend to problems they face in their first year.
- ○ Selected out of 324 candidates, in a team of 77, consisting of students from 3rd, 4th and 5th year.

➢ **Department Academic Mentor, Dept. of CSE, IIT Bombay**   [2011]
- ○ Responsible for mentoring and monitoring CSE students facing academic problems to help them stay motivated and cope with any kind of pressure they face, academic or otherwise.
- ○ Required to act as a communication channel between the faculty and students, and respond to the needs of both.

➢ **Teaching Assistant, Modern Physics**   [Autumn 2011]
- ○ Serving as a Teaching Assistant (one among 6) for the first year course on Modern Physics. Responsible for a class of 43.
- ○ Duties include conducting tutorials, quizzes, attending to doubts, problems and evaluating exam papers.

TECHNICAL SKILLS

➢ *Operating Systems :* Windows, Ubuntu (Linux)
➢ *Programming :*
- ○ Fluent in C, C++, Java, PLT Scheme(now known as PLT Racket) and OpenGL
- ○ Familiar with Python and GNU Prolog
➢ *Web Development :*
- ○ Fluent in XHTML, XML, CSS, JavaScript (DOM), Ajax, PHP, SQL and XUL
- ○ Familiar with Flash ActionScript, jQuery,
➢ *Other :*
- ○ Microsoft Office
- ○ Adobe Photoshop (Image Editing), Adobe Dreamweaver (Web Designing),
- ○ Adobe Flash, Adobe Flex Builder (Rich Internet Applications Development)
- ○ Sony Vegas, Adobe Premiere, Adobe After Effects (Video Editing and Special Effects)

EXTRA-CURRICULAR ACTIVITIES

- ○ Movie-making : Active member of Silverscreen - Film Club, IIT Bombay
  - ➢ Directed and Edited a music video that won first position in Freshiezza 2009, an institute-wide competition, and was sent by the Film Club for many other competitions
  - ➢ Directed, edited and acted in short films, and videos for Techfest and Mood Indigo
- ○ Active member of Web and Coding Club, IIT Bombay
- ○ Made a remote-controlled car for a racing competition in first year
- ○ Other Interests : Music, Photography, Puzzles, Chess, Rubik's Cube