

# Mohd. Hidayath Ansari

Senior Undergraduate  
Dept. of Computer Science

Indian Institute of Technology, Bombay  
Powai, Mumbai 400 076

hidayath [AT] gmail.com

<http://www.cse.iitb.ac.in/~ansari>

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**Interests** : Databases and Data Mining, Bioinformatics, Algorithms, Systems

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## Formal Metrics

- **Graduate Record Examination** January 2006  
Score: 1510  
Quantitative : 800/800 (92<sup>nd</sup> percentile)  
Verbal : 710/800 (97<sup>th</sup> percentile)
- **Test of English as a Foreign Language (iBT)** October 2006  
Score: 115/120
- **Indian Institute of Technology Bombay** 2003-present  
4<sup>th</sup> Year Undergraduate Student.  
Department of Computer Science  
Set to graduate in May 2007.  
Current CPI: 8.68
- **Ratna Junior College, Hyderabad, India** March, 2003  
Intermediate Public Examination, 2003: 93.2%
- **Madina Public School, Hyderabad, India** March, 2001  
Secondary School Certificate, 2001: 82.3%  
10<sup>th</sup> grade matriculation Board Exam

## Academic Honors

- **AIR 49** – Ranked **49<sup>th</sup>** in IIT-JEE 2003, out of 180,000 students all over India.
- Ranked **154<sup>th</sup>** in India in AIEEE 2003, among more than 350,000 students all over India.
- **NTSE scholar** – Was awarded the prestigious National Talent Search Scholarship in the year 2001.
- Graduated from 8<sup>th</sup> grade from **North Jakarta International School (Indonesia)** as Outstanding Student of the Year with Awards for Academic Excellence in English, Mathematics, and Social Studies.

## Publications

- R. K. Joshi, Harikrishnan C.R., M. Hidayath Ansari, **Mobile Agent Abstractions and Implementations**, IEEE Workshop on Mobile Computing Systems and Applications (HotMobile 2007) (*under review*)

## Research Projects

- **Efficient Resource Allocation in multi-purpose servers**  
Advisor: Prof. Ashraf Abounaga - University of Waterloo, Canada, May - July 2006  
This project focused on finding the optimal memory and CPU resource distribution to the database server and application server in a standard J2EE architecture. Various benchmarks were used to develop a method to dynamically calculate a distribution for optimal throughput and response times.
- **Ambient Calculus procedures for mobile agents**  
Advisor: Prof. R. K. Joshi - (*ongoing B.Tech Project*) July 2006 –  
I am studying the application of Ambient Calculus to abstracting and modeling mobile agent behavioral patterns. I am also studying proof techniques for formally verifying correctness of Ambient Calculus

algorithms and programs.

## Other Projects

- **Junior Thesis/Seminar: Membrane Computing**, Jan – April 2006  
In a literature survey of membrane computing, I focused on studying the expressive power and applications of Transition P Systems and variations of it.
- **Word Search in Document Images**  
IIIT Hyderabad – May – July 2005  
I was part of a group that developed parts of a prototype interface for annotation and indexing of words from scanned document images, with the aim of providing a search engine that locates relevant documents in response to a text query. Modules I contributed to include page segmentation and verification, feature calculation and clustering.
- **Quantum Cryptography** – A literature study.
- **Dynamic Type Recovery in Scheme** – A literature study.
- **Information Retrieval from Homepages and Web-Document Classification**  
We used a heuristic approach to extract information like research interests and hobbies from university homepages, and applied basic NLP techniques to handle context shifts and polarity analysis. We used SVM bag-of-words features for 2-class classification of a local corpus of documents we extracted from the Open Directory Project and elsewhere.
- **Ranking the shortest paths in a directed graph**  
I implemented modifications of standard algorithms to find the  $k^{\text{th}}$  shortest path in a directed graph, and compared running times. This was extended to handling negative edge weights and loopless paths as well. Done as part of a Data Structures and Algorithms course.
- **Online Adaptive Examination Interface**  
Provides an online examination facility similar to tests like the GRE. It involves use of JDBC, SQL, Servlets and JSP, to make the back and front ends for both examinees and examiners. Difficulty of the questions changes dynamically in response to user's performance. Done as part of Database Systems course.
- **Anaconda, Techfest 2005**  
Was part of the core team that conceptualized, designed, coded and executed Anaconda at Techfest 2005. It is an AI game based on Snake and KTron, in which two codes fight it out as snakes on a game arena.
- **Crossword Grid Structure Generator**  
An algorithm to find the optimal grid representation in a crossword for a given set of words, taking into account the number of vertical-horizontal intersections and grid-size. This project was coded in a functional programming language, Scheme.

## Skills

*Operating Systems* : Windows, Linux (various flavors)  
*Programming Languages/Platforms/Other Skills* : C, C++, Java, Scheme, Haskell, Qt, RAD, JDBC, JSP, SQL, Visual Basic/C++, Fortran 90/95, Unix Shell Scripting, Perl, PHP, Python, Ruby, Awk, Sed, HTML/CSS, JavaScript, LaTeX

## Relevant Courses

*By the end of Fall Semester 2007, I will have completed the following courses:*

- Data Structures and Algorithms, Design & Analysis of Algorithms
- Discrete Mathematics, Formal Methods, Theory of Computation, Linear Optimization
- Algorithms in Computational Biology
- Operating Systems, Networks, Compilers
- Databases and Information Systems
- Network Security
- Abstractions and Paradigms of Programming, Principles of Programming Languages
- Artificial Intelligence
- Probability and Statistical Inference, Statistical Foundations of Machine Learning
- Calculus, Linear Algebra, Vector Calculus and Differential Equations
- Logic Design, Electronics Design, Basic Electric Circuits

## Extra-Curricular Activities

### *Organizational*

- **Class Representative, 2005 – 2006**  
My responsibilities involved managing issues that affect the batch. I also organized a week-long Works Visit to Bangalore for the entire batch to various companies there and handled the associated logistics.
- **Student Mentor, 2006-present**  
Member of the mentor team for the second year students in the department.
- **Hostel Computer Secretary, 2004-present**  
Elected Hostel Computer Secretary, involving system administration of over 40 computers, and network services and maintenance for over 370 computers and 500 users.
- **Organizer in ACM-ICPC Regional Finals , December 2003**
- **TechFest, IIT Bombay, 2004 and 2005**  
Co-ordinator for Web 2005, and Organizer for Web and Lecture Series 2004.

### *Competitions and Sports*

- **3<sup>rd</sup> position in The Hindu Young World Quiz**  
I placed third in the South India Regionals of the most prestigious trivia quizzing event at college level in South India.
- I have won many school and college level competitions in quizzing, debating, and speaking.
- I played right forward in my school's senior soccer team.

### *Others*

- Was an active organizer in planning and executing a summer camp in May 2006 to introduce high school students in Hyderabad to concept-based understanding learning and overall personal development.
- I am well-versed in Urdu, English, and Bahasa Indonesia and I can understand French.
- My hobbies include reading extensively, chess, soccer, and learning new things, world history and political science in particular.

Mohd. Hidayath Ansari  
November 2006  
Mumbai