

## Education and Honours

- **Master of Science in Computer Science** Expected May 2014  
*The University of Texas at Dallas, Richardson, Texas* GPA: 3.95/4
- **Bachelor of Technology in Electrical Engineering** August 2010  
*Indian Institute of Technology (IIT) Bombay, Mumbai, India* GPA: 7.46/10
- All India Rank 94 in Indian Institute of Technology Joint Entrance Exam 2006 among 300,000 students.
- Selected from the state for the 4th Invitational World Youth Mathematics Intercity Competition.

## Research Experience

- **Developing a new system for Big Data Analytics** May 2013  
*Brown University Providence, Rhode Island*
  - Worked on a project to construct a distributed memory abstraction that lets the programmers perform in-memory computations on large clusters in a fault-tolerant manner.
- **Hybridization Methods for the analysis of Biomolecular Networks** May 2009 - July 2009  
*Institut National De Recherche En Informatique Et En Automatique Paris, France*
  - Proposed a mathematical model to calculate *Violation Degree*, a measure of how far a given numerical trace is from satisfying a temporal logic specification.
  - Composed a MATLAB library to implement this model which increased the calculation speed of *Violation Degree* by about 30 times and demonstrated the calculations for more complex specification models and properties.
  - Fashioned this library to guide the search for models satisfying a given specification. Fabricated an interface where the user could select optional optimizations to further decrease the computing time for the selected mathematical models and properties.
- **Algebraic Analysis of Latin Squares** Aug 2009 - May 2010  
*B. Tech Thesis (Guide: Prof. Harish Pillai)*
  - Investigated research papers in combinatorial mathematics concentrating on Gerechte Designs, Latin Squares, Affine and Projective Geometry, and Coding theory.
  - Executed a comparative analysis of a variety of algorithms for solving sudokus. Extended this analysis to extract results for special cases of latin squares like symmetric sudokus.
  - Designed algorithms and formulated codes in C++ to enumerate sudokus and generate *Minimum sudokus* (irreducible sudokus with unique solutions and minimum possible givens). Surveyed the outputs of these codes to predict the minimum possible number of givens in a sudoku puzzle.

## Teaching Experience

- **Math Lab Tutor** Jan 2013 - Present  
*The Student Success Center, The University of Texas at Dallas Richardson, Texas*
  - Assist students at the University of Texas at Dallas in achieving their academic goals across a wide variety of subject areas including math, physics and statistics.
  - Effectively interact with students on an individual or group basis to dispense information and mathematical concepts through oral and written communication and through the use of physical and technological demonstrations.

## Professional Experience

- **Data Engineer** Jan 2011 - June 2012  
*Future Bazaar Mumbai, India*

- Head of the *Analytics and Business Intelligence* Team. Collected reporting requirements from business teams (Management, Category, Finance, Customer Service) for daily, weekly and monthly reviews. These reports were examined by the CEO and board directors for making business decisions.
- Constructed an architecture to carry out ETL (extract, transform and load) processes from multiple databases (ATG, Oracle, MySQL) into a single MySQL database.
- Conceptualized and implemented Order Life-cycle Management, a system to assign and regulate order-states to the order-items. Each order-state had a responsible team with a Turn Around Time(TAT) before which the order-item needed to be moved out of that state, and each team had several possible information flows to take the order-item to the next state.
- Independently developed *sellers.futurebazaar.com*, an interface for the sellers to track orders, sales summary and product reviews, upload product inventory and edit settings.

## Relevant Coursework

- Design and Analysis of Computer Algorithms
- Database Design
- Artificial Intelligence
- Discrete Mathematics
- Advanced Database: Big Data Analytics
- Operating Systems Concepts

## Academic Projects

- **Comparative analysis of approaches to sentiment analysis of tweets** *Jan 2013 - May 2013*  
*Guide: Prof. Latifur Khan*
  - Implemented an application of twitter data processing that predicted the ratings of movies on a scale of 0-10 using three different approaches, and compared the ratings obtained with IMDB rating.
  - The first approach used a list of positive words and a list of negative words to classify each tweet.
  - The second approach used the sentiment140 api for the classification.
  - The third approach created a classification model using a training-and-testing data with naive Bayes method, and then used this model to classify each tweet, thereby rating it.
- **Programming Project in Artificial Intelligence** *Jan 2013 - May 2013*  
*Guide: Prof. Haim Schweitzer*
  - Designed and developed a project in python that simulates Nine Men's Morris board game.
  - Wrote efficient codes to output the best possible moves using the Minimax algorithm and alpha-beta pruning algorithm. The code worked correctly for both white and black players, and in the opening, midgame and end-game phases.
  - Earned the position of **first champion** in the tournament for this game in the class (76 students) using reliable and fast code and innovative self-designed static estimation algorithms.
- **Database Design and Implementation Project** *Aug 2012 - Dec 2012*  
*Guide: Prof. Weili Wu*
  - Compiled a conceptual design (EER model) for a large custom City library database project.
  - Developed a relational schema in third normal form for this design and executed SQL statements to create the database and views, populate the tables and solve challenging queries.
  - Assembled the database in Oracle and used a database state to verify the correctness of queries.

## Programming Skills

**Languages:** Python, C, C++, Java

**Operating Systems:** Linux, Mac OS X, Windows

**Miscellaneous:** Hadoop, MapReduce, Pig Latin, Hive, Mahout, Cassandra, MySQL, Git, MATLAB, HTML, CSS, Javascript, jQuery