



Ankush Das  
Computer Science & Engineering  
Indian Institute of Technology, Bombay  
Specialization: None

100050042  
UG Third Year (B.Tech.)  
Male  
DOB: 10/10/1992

Examination	University	Institute	Year	CPI / %
Graduation	IIT Bombay	IIT Bombay	2012	9.09
Intermediate/+2	Central Board of Secondary Education(CBSE)	Delhi Public School, Faridabad	2010	91.60
Matriculation	Central Board of Secondary Education(CBSE)	Delhi Public School, Faridabad	2008	93.60

#### MINORS AND HONOURS

- Pursuing **honours** in Computer Science and additional **minor** in **Mathematics**

#### PROJECTS AND INTERNSHIPS

**Game Theory**, Guide: Prof. Krishnendu Chatterjee, I.S.T. Austria May - July 2012

- Conducted **literature survey** for average case analysis of classical algorithms
- Worked on a project to study **simple reachability** and **alternating reachability**
- Studied **Buchi games** and **Parity games**, to optimize the classical algorithm
- Applied Game Theory concepts to do the **average case analysis** of classical algorithm of Buchi games and **optimize** the **average time** for Parity games
- Developed a **working model** to **simulate** the classical algorithm for Buchi games

**Elevator Simulation**, Guide: Prof. Varsha Apte Oct - Dec 2011

- Designed a system to simulate the events in an elevator system
- Attempted to **optimize the algorithm** used in elevator systems
- Elevator Simulation with a **variable number of elevators and floors**
- Calculated and optimized **performance metrics**, showing the average values for the elevator

**Rabbo Torro**, Guide: Prof. Amitabha Sanyal Jan - Apr 2011

- Built a game which included generating random mazes using **recursive division algorithm**, solving them by visiting each path recursively in **PLT Scheme/Racket**
- Designed a user-friendly **GUI** with rotating mazes to increase difficulty, keyboard input to move user's player, alongwith features like high-scores
- Implemented **AI** with maze solver for opponent with **thread-handling**

**Pocket Tanks**, Guide: Prof. D.B. Phatak Aug - Nov 2010

- Used **Object Oriented Programming** in C++ for defining projectile motion using system time to implement motion and various attributes to design different weapons
- Implemented **AI** for opponent with varying difficulty using varying random area around tank as the area of attack
- Implemented **GUI** with random terrain and graphical input for power and angle, alongwith other features including multi-player, high-scores and exit

## ACADEMIC ACHIEVEMENTS

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- Secured **AIR 1** in **Indian National Mathematics Olympiad (INMO)** 2008-2009
- Selected among 35 students for **Orientation Cum Selection Camp for International Mathematics Olympiad** 2009 and 2010
- Selected among 15 students from all over India to attend a month long **Nurture Program** in May 2011 on **Algebra, Topology and Analysis**
- Secured **All India Rank 45** in **IITJEE-2010** amongst 470,000 aspirants
- Recipient of **NTSE Scholarship** [2008 onwards]: Awarded by the MHRD, Govt. of India
- Awarded Certificate of Merit for being placed in National Top 1% in **National Standard Examination in Physics (NSEP)**, 2009-10
- Awarded Certificate of Merit twice for being placed in National Top 1% in **National Standard Examination in Astronomy (NSEA)**, 2006-07 and 2009-10
- Awarded Certificate of Merit thrice for being placed in National Top 1% in **Regional Mathematical Olympiad (RMO)**, 2006-07, 2008-09 and 2009-2010
- Secured **All India Rank 677** in **AIEEE-2010** amongst 1 million aspirants
- Cleared the first level of **KVPY**, 2009-2010 (Kishore Vaigyanik Protsahan Yojana) organized by Department of Science and Technology, Government of India

## SKILLS

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**Programming Languages:** C, C++, LaTeX, PLT-Scheme, SWI Prolog, JAVA, MySQL

**Web Designing:** HTML/CSS, JavaScript, PHP

**Languages:** English, Hindi, French

## RELEVANT COURSE WORK

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**Computer Science:** Abstractions and Paradigms for Programming, Discrete Structures, Data Structures, Design and Analysis of Algorithms, Automata Theory, Logic Design, Computer Architecture, Computer Networks, Database and Management Systems, Software Systems

**Mathematics:** Calculus, Linear Algebra, Differential Equations, Real Analysis, Complex Analysis, Basic Algebra

## POSITIONS OF RESPONSIBILITY AND EXTRACURRICULAR ACTIVITIES

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- **Technical**
  - Participated in Yahoo HackU competition, and built a software which predicts the usual timings to find friends online
  - Built an automatic Line Follower, securing 6th position among 20 teams in IIT Bombay
  - Built a wireless remote controlled all terrain car, securing 4th position among 200 odd teams in IIT Bombay
- **Sports**
  - Won gold medal in Inter-Hostel Football Tournament among 12 teams in IIT Bombay in 2011
- **Leadership**
  - Class Representative of Computer Science Department in First Year
  - Worked as Organizer in Infrastructure Department in Techfest 2011