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EDUCATION

Year	Degree	Institution	Performance
2014	B.Tech, Computer Science and Engineering	IIT Kanpur	**8.5/10.0***
2010	Class 12 : CBSE Board	Apeejay School, Sheikh Sarai, New Delhi	92.2%
2008	Class 10 : ICSE Board	Christu Jyoti Convent School,Baghpat	93.3%

*after completion of 6 semesters

SCHOLASTIC ACHIEVEMENTS

AWARDS

- Awarded **Academic Excellence Award** for academic year 2010-11, awarded to top few students in the department
- Awarded Certificate of merit for being placed in top 1% in **National Physics Olympiad** 2010 held by Indian Association of Physics Teachers and qualified for next level exam
- Awarded Certificate of merit for being placed in top 1% in **National Chemistry Olympiad** 2010 held by Indian Association of Chemistry Teachers and qualified for next level exam
- Awarded **Best Project Award** in Introduction to Manufacturing Processes course among 60 other projects
- Awarded **Second Best Project Award** for making paddle-boat in TA201 course among 65 other projects

SCHOLARSHIPS

- Awarded **Kishore Vaigyanik Protsahan Yojana (KVPY)** scholarship for the year 2009-10 (***top 90 students*** across India)
- Awarded **CBSE Merit Scholarship** under AIEEE 2010. Awarded to 332 students from a pool of 11Lac students
- Awarded **Merit-cum-Means Scholarship** for meritorious performance for three consecutive years since 2010
- Awarded Certificate of excellence in **IGSC Scholarship Examination** held at National level

RANKS

- Achieved an **All India Rank(AIR) 229** in **IIT-JEE'10** in which nearly 5Lac students appeared. **Percentile-99.95%**
- Secured **AIR 262 Rank** in AIEEE'10 in which nearly 1,100,000 students appeared. **Percentile- 99.98%**
- Secured **AIR 6** in UPTU Examination 2010. **Percentile- 99.99%**

INTERNSHIPS / WORK EXPERIENCE

Content Monitoring for Wal-Mart affiliates (WM Global Technology Services India Pvt. Ltd, Bengaluru) *(May-July 2013)*

- Made a binary classifier for Webpages: Given a URL Classify Webpage as Bad if it contains adult, racist, communal content otherwise Good. Also Display Wal-Mart adds only on good pages.
- Generated probability of occurrence of a word in bad page and good page. Based on these probabilities a score (word probability score) was calculated for the page. Also we were using an API that returned the concepts for the page. We generated a concept vs. concepts Matrix and a score (matrix score) was assigned to the webpage based on this matrix.
- We used logistic regression to classify webpage as Bad or Good using word probability score and matrix score. Overall precision increased from 70% to 95%. Also recall for Bad pages increased from 57% to 95%.
- We also did classification just based on URL and not the content of the Webpage by looking at the structure of the URL.

Parallel Computing for Autonomous Vehicle Simulation (Carnegie Mellon University, USA) *(May-July 2012)*

Guide: Prof. Raghunathan Raj RajKumar, Department of Electrical and Computer Engineering, CMU
Technology used: coding in CUDA, GeForce GT530 Nvidia Graphic Card

- **Selected among 17 students** from across the globe for **ECE internship program** at Carnegie Mellon University
- Aim of the project was to make AutoSim work on GPU architecture. AutoSim is a modular software that simulates Autonomous cars in hybrid environment consisting of real cars and autonomous cars. As AutoSim was coded in C++ it could only be used for simulating smaller number of cars and hence was not useful for inheriting real world map of cities.
- We implemented models on GPU and use parallelism of GPU while calling same models for different cars, hence enabling us to run simulation for thousands of car.
- Results were shown as execution time comparison between AutoSim running on single core CPU and GPU for different number of cars simulated. Also number of cars that could be simulated increased almost 50 times.

KEY ACADEMIC PROJECTS

Operating Systems *(Aug-Nov 2012)*

Technology used: coding in C and worked on *PINTOS* OS framework and *BOCHS* virtual machine

- The project aimed at providing various functionalities to **PINTOS**, instructional software that runs as secondary OS on Linux
- Implemented **POSIX message queue** with system calls like *open(), close(), unlink(), send()* and *receive()*
- Implemented an **indexed file-system** with direct, indirect and doubly indirect blocks so that files can grow and address the problem of external fragmentation. Also allowed for **hierarchical subdirectories** via system calls like *mkdir(), readdir(), chdir()* and provided for a **buffer cache**.

- Implemented virtual memory management via pure demand paging and shared memory via *open()* and *close().*
- Implemented **POSIX threads** and **scheduling algorithms** like First-Come-First-Serve, Round Robin and Priority based. Implemented system calls like ***fork()* and *exec()*.**

P2P File Sharing System *(Aug-Nov 2012)*

Technology used: coding in socket programming

- Implemented a Napster like P2P file sharing system where each user can **act as both server and client.**
- The system had a **central server** which keeps a log of the files shared by all the users who have currently logged in.
- Any user can request for a file to the central server which would return the name of the user who has shared that file. The two users can then set up a connection between themselves and share the file.

Digital Clock *(Aug-Nov 2011)*

Technology used: coding in BSV (BlueSpec Verilog), FPGA (Field Programmable Gate Array) architecture

- Designed a digital clock in BSV with four modes *HH:MM, MM:SS, stopwatch, alarm modes* and ran on FPGA architecture
- User could set time, alarm and use clock as stop watch

OTHER PROJECTS

Cricbot (Robotics Club, IIT Kanpur) *(Dec 2011)*

Technology used: coding using OpenCV, Image Processing

- Autonomous robot that works on the principle of Image Processing
- The robot had to collect the balls which was rolled down from the ramp and then deposit them into the collection pit in minimum possible time and play a one-on-one cricket match against the opponent robot

Rover Bot (Robotic Club, IIT Kanpur) *(May-July 2011)*

- Developed a system design for a difficult **regional exploration** rover for demonstration of locomotion capabilities, payload accommodation, and control. This is somewhat similar to lunar rover
- Efficient locomotion system capable of moving on rough terrains, steps, cylindrical objects, and slope up to 50 degree
- An article for the same was **published** in a reputed newspaper describing about the robot's technologies.

Flying Dragon Model (Introduction to manufacturing process, IIT Kanpur) *(Jan-April 2012)*

Technology used: Sheet metal, Welding, Casting

- Made a Flying dragon model using Welding, Casting and Sheet Metal work which was attached to base at only single point
- Got **Best Project Award** among 60 other projects.

Paddle Boat (Introduction to Manufacturing Process, IIT Kanpur) *(Jan-April 2012)*

Technology used: Milling, Drilling, Lathe Machine

- Made a mechanical model of Da-Vinci Paddle Boat which supports conventional paddling by legs
- Multiple workers can provide their efforts on a central rod which prevents the problem of **synchronizing efforts** in usual paddling. Got **Second Best Project Award** among 65 other projects.

RELEVANT COURSES

- Operating Systems
- Computer Networks
- Data Structures & Algorithms
- Algorithms II *
- Database Management*
- Principles of Programming Language
- Compiler Design*
- Artificial Intelligence Programming*
- Discrete Mathematics
- Theory of Computation
- Intro. to Computer Organization
- Programming Tools & Techniques
- Introduction to Mathematical Logic
- Probability and Statistics
- Multivariable Calculus
- Complex Analysis & Linear Algebra
- Fourier Analysis & Differential Equations

*to be completed in Jan-April'13

TECHNICAL SKILLS

Programming Languages	C, C++, Java, Python, Oz, small talk, Assembly Language ,Bluespec Verilog
Platforms	Windows, Linux
Tools	LaTeX, Beamer, Yacc, Make, Shell, awk, GNU Octave, SQL, Gdb, MATLAB, Autocad

POSITIONS OF RESPONSIBILITY

- **Academic Mentor, Counseling Service** IIT Kanpur for academic year 2011-12
  - Taught ESC101(C language) and PHY103 (Electrodynamics) to students facing academic problems
- **Student Guide, Counseling Service**, IIT Kanpur for academic year 2011-12
  - Mentored 6 freshmen students and assisted them in getting familiar to the college environment
  - Assisted in the successful organization of the orientation programme for the benefit of around 815 students in IIT Kanpur
- **Secretary, Robotics Club**, IIT Kanpur for academic year 2011-12
  - **Guided students** in robotics events in Techkriti, annual inter-collegiate technical festival of IITK and Takneek, the Intra-college Technical Festival of IITK. Responsible for scheduling and smooth conduction of robotics **lectures and workshops**
  - Organized competitions under Takneek and Techkriti, and projects for students over the summers
- **Computer Centre Secretary**, Hall 2 for academic year 2011-12
  - Responsible for installation of new softwares and proper working of the hardware

- **Takneek Pool Co-ordinator,** Takneek'12
    - Organized scientific and technological events from *Rajput pool,* consisting of 3 hostels and ensured healthy participation. Overall efforts lead to **first position** among other pools.

EXTRA-CURRICULAR ACTIVITIES/INTERESTS	
ROBOTICS	• Made an autonomous line following robot in Takneek'10. Participated in Wild Soccer in Takneek'11. • Selected from IIT Kanpur to participated in Kshitij'11 (IIT Kharagpur fest) and Techfest'12 (IIT Bombay fest)
VOLUNTEER WORK	• **Certificate of Special Effort** in Mass Awareness Campaign against AIDS and Cancer organized by Caring Souls Foundation to alleviate the sufferings of the Needy Cancer Patients
MISC	• Business Club: Awarded **first prize** in business simulation organized by **IIM Bangalore** at IIT Kanpur