NIKHIL AGGARWAL

E-mail: nikhil@iitk.ac.in , nikhil23393@gmail.com Ph. (+91)9005751932

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

- **Academic Excellence Award** for academic year 2010-11, awarded to top few students in the department
- Certificate of merit for being placed in top 1% in **National Physics and National Chemistry Olympiad** 2010
- **Best Project and Second Best Project Awards** in manufacturing and mechanical course projects respectively

SCHOLARSHIPS

- **Kishore Vaigyanik Protsahan Yojana (KVPY)** scholarship for the year 2009-10 (***top 90 students*** across India)
- **CBSE Merit Scholarship** under AIEEE 2010 awarded to 332 students from a pool of 11Lac students
- Certificate of excellence in **IGSC Scholarship Examination** held at National level

INTERNSHIPS

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

Technology used: coding in JAVA, eclipse IDE, SBT project, Machine Learning

- Made a **binary classifier for Webpages**: Given a URL, classify it as Bad if it doesn't adhere to Wal-Mart policies otherwise Good and display Wal-Mart ads on good Webpages
- **Generated probabilistic distribution data** of words in Bad URLs and Good URLs and concept matrix for huge dataset
- **Used logistic regression** to classify webpage leading to tremendous increase in precision and recall for bad page of the system
- Also **Implemented classification 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

- **Implemented AutoSim for GPU Architecture** (Parallel execution) so that traffic model for a city could be simulated easily
- AutoSim is modular software **that Simulates Autonomous Cars** in hybrid environment consisting of real and autonomous cars
- **Analyzed Execution Time** for different models of AutoSim on single core CPU and GPU for different number of cars simulated
- **Performance of AutoSim increased by a factor more than 50** as compared to CPU(sequential execution) implementation

KEY ACADEMIC PROJECTS

Database Systems- Bill-Monk *(March-April 2013)*

- Built a website where user could keep track of things he has borrowed from others and lend to others
- User could **add shared bills, payments of debts, shuffle** the debt between friends and manage his library of items

Dynamic Graph Connectivity in poly-logarithmic worst case time: Graph Algorithms *(March-April 2013)*

- **Implemented the Monte Carlo algorithm** for dynamic graph connectivity in poly-logarithmic worst case
- **Analyzed the error** in the answer and run time for different number of vertices and edges and compared with trivial algorithm

Operating Systems *(Aug-Nov 2012)*

- The project aimed at providing various **functionalities to PINTOS**, instructional software that runs as secondary OS on Linux
- Implemented **POSIX message queue, indexed file-system** with direct, indirect and doubly indirect blocks, **buffer cache, virtual memory management** via pure demand paging**, POSIX threads and scheduling algorithms** like First-Come-First-Serve, RR

POSITIONS OF RESPONSIBILITY

- **Takneek Pool Coordinator** *(2012-13)*
  - **Led my pool** consisting of students from 3 hostels in organizing Takneek'12 and ensured healthy participation in all events
  - Scored 1100 points and stood **1st in more than 75% of the events** leading to remarkable success and **1st position in Takneek'12**
- **Secretary, Robotics Club**, IIT Kanpur *(2011-12)*
  - **Guided students and organized competitions** in robotics events in Techkriti and Takneek.
  - Responsible for scheduling and smooth conduction of robotics **lectures and workshops**
- **Academic Mentor, Counseling Service** IIT Kanpur: Taught ESC101(C language) and PHY103 (Electrodynamics) *(2011-12)*

RELEVANT COURSES

Data Structures & Algorithms, Algorithms II, **Artificial Intelligence Programming**, Introduction to Mathematical Logic, Multivariable Calculus, **Probability and Statistics**, Complex Analysis & Linear Algebra, Fourier Analysis & Differential Equations, **Introduction to economics**, **Economic Analysis of Laws**, **Applied Game Theory***, Principles of Database Management

*to be completed in July-Nov 2013

EXTRA-CURRICULAR ACTIVITIES

- **Robotics:**
  - Developed a system design for a difficult **regional exploration** rover with extraordinary locomotion capabilities, payload accommodation, and control. An article for the same was **published in a TOI** describing about the robot's technologies.
  - Participated in Techkriti'11 and 12, Kshitij'11 IIT Kharagpur, Techfest'12 IIT Bombay, Wild Soccer in Takneek'11 and 12
- **Business:** Won **First prize** in **Business simulation game** on a virtual market for cycles held in IIT Kanpur by IIM, Bangalore