Ujjwal Kumar Singh

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Educational Qualifications

Year	Degree/Certificate	Institute/School	CGPA/%age
2014	B. Tech(Computer Science)	IIT Kanpur	8.2/10.0
2010	AISSCE(CBSE Board)	Milton Public School, Agra	86%
2008	AISSE(ICSE Board)	Rani Laxmibai Public School, Jhansi	93%

- **ACM ICPC International** Collegiate Programming Contest 2012, Kanpur site regional finalist

Work Experience

Research Experience

- **K-Dominance in skyline join queries(KSJQ)** IIT Kanpur
  B.Tech Project under the guidance of Dr. Arnab Bhattacharya *Aug'13 - June 13*
  - **Initiated research** on finding Skyline data points according to k-Dominance in relational database Join Queries
  - **Designed efficient algorithms** for computing K-Dominant skyline sets in joined relations
  - **Verified the efficiency** of the designed algorithms on carefully designed synthetic data

Academic Projects

- **ARTIFICIAL GAMING AGENT** Feb'13 - Apr'13
  Artificial Intelligence Course Project under the guidance of Dr. Amitabha Mukherjee
  - **Developed artificial Gaming agent**, capable of intelligently playing any GDL describable game without having any prior knowledge of it and without any human intervention.
  - **Explored Bandit and Monte Carlo Tree Search** (MCTS) methods.
  - **Implemented** recent work published by **CadiaPlayer** (3 times winner in General Game Playing competition in **AAAI conference**) which involves putting Upper Confidence Bound (UCB) in MCTS approach.
  - Selected in the **top 5 among 40 projects** in the course : Artificial Intelligence.
- **MOVIE RATING PREDICTION SYSTEM** Aug'13 - Dec'13
  Machine Learning Course Project under the guidance of Dr. Harish Karnick
  - **Collaborative filtering** setting where one users preferences are used to find users with similar preferences.

  - Similarity between the users or movies can be calculated by using the **Jaccard Distance* and Cosine Distance**
  - Improved the accuracy by using different methods like **k-nearest neighbor approach and SVM classifier**

- **PINTOS : OPERATING SYSTEM** Aug'12 - Nov'12
  Operating Systems Course Project under the guidance of Dr. Subhajit Roy
  - **Implemented a subset of Posix interface** of message queues and Pthreads to **solve the Producer-Consumer problem**
  - **Implemented the First Come First Serve (FCFS), Round Robin (RR) and Priority Scheduling** scheduling policies
  - **Implemented virtual memory management** via pure demand paging with backing store using big blocks of memory
  - **Implemented fork(), exec(), mkdir(), chdir(), readdir()** system calls

- OTHER PROJECTS
  - **Hall and Library Management System** using Django Framework.
  - **Compiler for C++** language
  - **Implementation of 32-bit processor** on FPGA

Java Community Contribution

- **Addressing issues in Garbage Collector in Java** Jan'14-Apr'14
  Objected Oriented Programming Course Project
  - Carried out exhaustive experiments to see the performance of G1 garbage collector for a given scenario.
  - **Configured G1 to achieve high responsiveness and skip STOP THE WORLD event**

Relevant Courses

Data Structures and Algorithms	Operating Systems	Database Systems	Computer Networks
Probability and Statistics	Algorithms-II	Compiler Design	Computer Organization
Advanced Network Security	Game Theory	Discrete Mathematics	OOPs
Randomized Algorithms	Machine Learning	Artificial Intelligence	

Technical Skills

1. First item
2. Second item

- First item

- Second item

Awards, Grants & Honours

Nobel Prize 2013
Big grant 2010-2013