Satwant Rana

Personal Data

Undergraduate
Mathematics and Computing
Indian Institute of Technology, Delhi

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Education

July 2012 - July 2017 — Integrated M.Tech in Mathematics and Computing
Indian Institute of Technology, Delhi
GPA: 8.6/10.0

Relevant Courses

Mathematics:	Combinatorics, Discrete Maths, Modern Algebra, Optimisation, Numerical Methods, Linear Algebra, Analysis, Probability and Stochastic Processes, Calculus.
Computer Science:	Algorithms, Data Structures, Computer Architecture, Operating Systems, Natural Language Processing, Neural Networks
Electrical:	Digital Design, Signal and Systems
Other:	Econometrics
Online:	Machine Learning, Probabilistic Graphical Models

Projects

Present, Summer 2014 — *The Next Generation of Open Information Extraction*
Facilitator: Prof Mausam

The project aims at creating the next generation of Open Information Extraction, a paradigm of IE, by the University of Washington, aimed at extracting arbitrary relations. The main aims of the project are increasing precision and recall of the current version of OpenIE, in the domains of list extraction, semantics of conjunctions and numeral understanding

Present, Fall 2014 — *Facial Expression Recognition using Autoencoders*
Facilitator: Prof Jayadeva

The project aims at creating a deep neural network based semi-supervised framework for inferring relevant high level features from unlabeled data, using available labels to disentangle the extracted features from potentially irrelevant features, in the domain of facial expression recognition.

Fall 2014 — *Tweet Tokeniser*

Created a tokeniser for tweets, segmenting tweet sentences into invidual tokens of words or entities. The tokeniser had additional features of normalising dates and time in the sentences as well.

Fall 2014 — *Sentiment Mining for Tweets*

The project aimed at creating a binary sentiment classification tool for tweets, with generic positive and negative sentiment labels. Explored Naive Bayes, SVM and Recurrent Neural Net classifiers. Implemented an SVM solution based on sentiment vectors for tweets.

Spring 2014 — *Paice Husk Stemmer*

Implemented the Paice Husk Stemmer, as a patch for the Xapian project. Created a C++ version that can be fed directly with custom rules. Also wrote a program to create a Snowball version with custom rules.

Spring 2013 — *A data structure for company hierarchy*

Implemented a Data Structure for storing Hierarchical Structure of a Company, with the features of quickly adding, deleting and finding LCA in the heirarchial tree of two employees. Implemented an AVL Tree for logarithmic time queries in the data structure.

Awards and Honours

2014 Shortlisted for Summer Undergraduate Research Award, IIT Delhi
2012 9th at ACM-ICPC Asian Regionals
2012 Attended Indian Training Camp for IOI
2012 All India Rank 817 in IIT JEE
2012 All India Rank 85 in All India Engineering Entrance Examination
2012 Became KVPY fellow
2011 Rank 1 in Regional Maths Olympiad, Delhi region
2011 National Top 1 percentile award in NSEP and NSEA in 2012
2010 Qualified NSEJS and NSEA Jr. in 2010

Affiliations

2014 Member of Data and Artificial Intelligence Research Group, IIT Delhi
2014 Student Lecturer at Coding Club, IIT Delhi
2013 Student Lecturer at Indian National Maths Olympiad Training Camp, Delhi

Sport Programming

Codechef: satwantrana, currently ranked 148 in short contests
Codeforces: satwant, yellow rated, amongst top 30 in India
Topcoder: satwant123, blue rated
Awards: 3rd in ACM - Asian Programming Contest, conducted by IIT Delhi
9th and 30th in ACM-ICPC Asian Regionals 2012 and 2013 resp.

Technical Skills

Languages: C++, Java, Python, SML-NJ, php, html, CSS, JS
Softwares/Tools: git, Django, web2py, ubuntu, LaTeX

Interests and Activities

Algorithms, AI, ML, Discrete Maths, Competitive Programming, Football, Movies, Travelling