Kunal Singhal

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Education

Indian Institute of Technology Delhi — New Delhi, India
Bachelor of Technology — *2012 - 2016 (expected)*
CGPA: 9.442

Relevant Courses Taken

Artificial Intelligence	Design Practices in Computer Science	Digital Electronic Circuits
Data Structures	Discrete Mathematical Structures	Combinatorics
Calculus and Analysis	Linear Algebra and Matrices	Quantum Physics
Programming Languages	Cryptography	Computer Architecture
Probability Theory	Stochastic Processes	Microeconomics
Algorithms	Systems Biology	Natural Language Processing
Graph Algorithms	Machine Learning*	

*online course at coursera.org

Projects

- **Classification of tweets based on Personally Identifiable Information** — UC Irvine, CA
  Reseach intern with ICS department under Prof. Sharad Mehrotra — *Summer 2014 - present*
  - rule based model of a PII learnt
  - a human analyst used for learning the model
  - active learning incorporated to use human resource efficiently
- **Next generation Open Information Extraction** — IIT Delhi
  proposed for SURA under Prof. Mausam — *Summer 2014 - present*
  - list identification and subsequent division to improve recall
  - number and conjunction identification and extracting special relations to improve precision and recall
- **AI Game Player for Connect n,m,k** — IIT Delhi
  course project under Prof. Mausam — *Jan 2014 - Apr 2014*
  - modified version of connect 4 game
  - the player uses mini max with alpha beta pruning
  - mini-max was testing against other techniques such as UCB and UCT
- **Prolog Interpreter in OCaml** — IIT Delhi
  course project under Prof. Sanjeeva Prasad — *Feb 2014 - Mar 2014*
  - ocamllex and ocamlyacc used for lexing and parsing respectively
  - ideas of backtracking and unification of terms were used to implement the relational backbone of Prolog interpreter
- **3D bike race game** — IIT Delhi
  course project under Prof. Subodh Kumar — *July 2013 - Sept 2013*
  - used OpenGL as graphics library
  - a dedicated physics engine was programmed
  - a database for High Scores is maintained
  - used frustum culling for enhancing the game speed

- **Single Cycle Processor Design** IIT Delhi
  course project under Prof. Smruti Ranjan Sarangi *Nov 2013 - Jan 2014*
  - a single cycle risc processor was designed using
  - the design implements simpleRisc ISA which is much similar to ARM ISA
- **Social Network Simulation and Analysis** IIT Delhi
  course project under Prof. Subodh Kumar *Sep 2013 - Nov 2013*
  - multiprocessing and multithreading used to achieve simulation.
  - inter process communication is established by Message Queues
  - final network after the simulation is stored as a graphml file.
  - in the analysis of the network, various queries such as shortest path, importance and clique size can be performed.

Sport Programming

- Indian team member in **International Olympiad in Informatics, 2012**
- My team (team Angle) **ranked 9th in ICPC Amritapuri Regionals.** Best in IIT Delhi.
- TopCoder: Yellow Rated - 1758 (among top 20 in India)

Awards, Grants & Honours

International Olympiad in Informatics 2012 July 2012
Indian Team Member

International Physics Olympiad 2012 July 2012
Silver Award

Asian Physics Olympiad 2012 May 2012
Silver Award

Indian National Mathematics Olympiad 2011 2011
All India First Position

Institute Silver Medal for Academic Excellenece Feb 2013
Given for obtaining highest CGPA at IIT Delhi

IIT-JEE 2012 All India Rank 18 May 2012
Got 18th rank among more than 500,000 students

Aditya Birla Scholarship 2012 Sep 2012
Given only to 15 engineering students all India

OP Jindal Engineering and Management Scholarship 2012 Sep 2012
Given to one student of each Year

KVPY Scholarship 2011 2011
Scholarship given for encouraging science students

AIEEE 2012 All India Rank 19 May 2012
Got 19th position among over 1 million students.

Designing and Coding Skills

Extensive	python, C++
Intermediate	html5, css3, JavaScript, C, php, LaTeX, Java, sql, bash, numpy
Basic	Django Framework, Apple Script, Standard ML, BASIC, Perl

Community Involvement

Lecturer and Operations Coordinator, Coding Club	July, 2014 - Present
Cultural Secretary, ACES	Dec, 2012 - Apr, 2014
Convener from Department, AIC	Mar, 2013 - Mar, 2014

Other Interests

I dance a lot. I love to play air guitar. And I just cannot resist talking philosophy. I also have a blog named "Tenet".