

# Kunal Singhal

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## Education

### Indian Institute of Technology Delhi

*Bachelor of Technology*

CGPA: 9.442

New Delhi, India

2012 - 2016 (*expected*)

## 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**  
*Research intern with ICS department under Prof. Sharad Mehrotra*  
UC Irvine, CA  
*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**  
*proposed for SURA under Prof. Mausam*  
IIT Delhi  
*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**  
*course project under Prof. Mausam*  
IIT Delhi  
*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**  
*course project under Prof. Sanjeeva Prasad*  
IIT Delhi  
*Feb 2014 - Mar 2014*
  - ocamllex and ocamllyacc used for lexing and parsing respectively
  - ideas backtracking and unification of terms were used to implement the relational backbone of Prolog interpreter
- **3D bike race game**  
*course project under Prof. Subodh Kumar*  
IIT Delhi  
*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**

*course project under Prof. Smruti Ranjan Sarangi*

- a single cycle risc processor was designed using
- the design implements simpleRisc ISA which is much similar to ARM ISA

IIT Delhi

*Nov 2013 - Jan 2014*

- **Social Network Simulation and Analysis**

*course project under Prof. Subodh Kumar*

- multiprocessing and multithread 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.

IIT Delhi

*Sep 2013 - Nov 2013*

## 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 (among top 50 in India)

## Awards, Grants & Honours

### International Olympiad in Informatics 2012

Indian Team Member

JULY 2012

### International Physics Olympiad 2012

Silver Award

JULY 2012

### Asian Physics Olympiad 2012

Silver Award

MAY 2012

### Indian National Mathematics Olympiad 2011

All India First Position

2011

### Institute Silver Medal for Academic Excellence

Given for obtaining highest CGPA at IIT Delhi

FEB 2013

### IIT-JEE 2012 All India Rank 18

Got 18th rank among more than 500,000 students

MAY 2012

### Aditya Birla Scholarship 2012

Given only to 15 engineering students all India

SEP 2012

### OP Jindal Engineering and Management Scholarship 2012

Given to one student of each Year

SEP 2012

### KVPY Scholarship 2011

Scholarship given for encouraging science students

2011

### AIEEE 2012 All India Rank 19

Got 19th position among over 1 million students.

MAY 2012

## Designing and Coding Skills

<b>Extensive</b>	PYTHON, C++
<b>Intermediate</b>	HTML5, CSS3, JAVASCRIPT, C, PHP, L <sup>A</sup> T <sub>E</sub> X, JAVA, SQL, BASH, NUMPY
<b>Basic</b>	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".