

# Soumye Singhal

Third Year Undergraduate  
Department of Computer Science and Engineering  
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<https://github.com/soumye>

## ACADEMIC DETAILS

Year	Degree	Institute	CPI/%
2015 - Present	B. Tech, Computer Science & Engineering	Indian Institute of Technology, Kanpur	9.8/10.0
2015	AISSCE (12 <sup>th</sup> CBSE)	Bal Bharati Public School, Pitampura	95.4%
2013	AISSCE (10 <sup>th</sup> CBSE)	Bal Bharati Public School, Pitampura	10.0/10.0

## Scholastic Achievements

- Awarded Academic Excellence Award at IIT Kanpur for the term 2015-16.
- Received A\*(top 1%) grade for exceptional performance in 10 courses.
- Secured All India Rank **579** in JEE Advanced 2015 among 1.2 million students.
- Awarded **KVPY** fellowship by IISc, Bangalore for securing All India Rank **272** in 2014.
- Among all India **top 30** in Group Mathematics Olympiad organized by CBSE in 2013.
- Awarded JSTSE Scholarship by Government of Delhi in 2012.

## TECHNICAL SKILLS

- **Languages** (C, C++, Python, x86, Octave, R, Verilog, MIPS)
- **Utilities** (Numpy, Tensorflow, ROS, GDB, Bash, git, L<sup>A</sup>T<sub>E</sub>X, Gnuplot)
- **Web** (Django, Javascript, HTML, CSS, SQL)

## Projects

- **Text Summarization and Data Mining** (Research Project)  
(Guide: Prof. Arnab Bhattacharya, May'17 - till date)
  - Aim of project is to do Abstractive text summarization using Sequence to Sequence, attention based Recurrent Neural Networks.
  - Implemented word2vec, Bag of Words and GloVe models for word vectors.
  - Read and Implemented basic models of Data Mining and NLP.
- **Autonomous Underwater Vehicle** (<https://github.com/AUV-IITK>)  
(Guide: Prof. Sachin Shinde & K.S. Venkatesh, May'16 - Jan'17)
  - **First Runner-ups** at the National level Competition SAvE-NIOT (2016) in debut attempt.
  - Built a Robot that follows a line, hits a buoy, fires torpedoes at targets and drops objects underwater.
  - Used Robot Operating System for Controls, OpenCV for Image Processing and Gazebo for simulation.
- **Securing ZooBar Server** (Course Project)  
(Guide: Prof. Sandeep Shukla, Jan'17 - April'17)
  - Found and exploited security vulnerabilities using control hijacking techniques like buffer overflow and format string attacks, and various browser based attacks like SQL injection, XSS, CSRF.
  - Implemented privilege separation and sandboxing in an okws server.

## Relevant Courses

- **Completed** - Introduction to Programming\*, Linear Algebra\*, Data Structures and Algorithms, Probability and Statistics\*, Computer System Security, Psychology of Language\* (\* : A\* Grade)
- **Ongoing** - Machine Learning Techniques, Probabilistic Machine Learning, Theory of Computation, Operating Systems, Advanced Algorithms

## Extra Curricular

- Served as a Secretary for the Programming Club IITK, organizing events like Freshers Programming Contest and Linux Installation Drive.
- Mentored 6 students on a project on System and Cyber Security as a part of ACA, IITK.

## FIELDS OF INTEREST

- Machine Learning, Natural Language Processing and Quantum Computing.