

# SOUMYE SINGHAL

SOPHOMORE · COMPUTER SCIENCE AND ENGINEERING, IITK  
soumye@iitk.ac.in · (+91)7054122337 · <http://github.com/soumye>

## EDUCATION

Year	Degree	Institute	CGPA/Percentage
2015-19	BTech CSE	Indian Institute of Technology, Kanpur	9.8
2015	12th   CBSE	Bal Bharati Public School Pitampura, Delhi	95.4%
2013	10th   CBSE	Bal Bharati Public School Pitampura, Delhi	10.0

## HONORS AND AWARDS

- All India Rank 579 , JEE ADVANCED 2015
- 0.1 Percentile , JEE MAINS 2015
- KVPY Fellow | All India Rank 272 , IISc Bangalore and Government of India 2013
- All India Top 30 , Group Mathematics Olympiad | CBSE 2013
- JSTSE Scholarship Awardee , Government of Delhi 2012

## PROJECTS

### Autonomous Underwater Vehicle (AUV)

Member, Team AUV-IITK, Prof. K.S. Venkatesh & Prof. Sachin Shinde IITK

- Part of the team that built our institute's first AUV. [1]
- Were placed 2nd at the national level competition SAVE, organized by NIOT Chennai.
- The aim of the Robot is detecting and following a line, hitting a buoy, firing torpedoes at given targets and dropping objects underwater.
- Implemented the tasks using Robot Operating System (ROS) for Controls, OpenCV for Image Processing and Gazebo for simulation

### GymkhanaLive: NEWS Webapp

Summer Project, Programming Club IITK

- Programmed a News Web Application using Django [2] for the use of the campus community akin to twitter/quora.
- The website displays the news and events of the various clubs and groups on campus.
- Implemented features like login, search, like and comment.

### System Security

Course Project, Prof. Sandeep Shukla IITK

- studied the architecture of the zoobar web server.
- 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 server side sandboxing of executable profiles in an okws server.

## Diophantine Equation

Course Project, Prof. Nitin Saxena

IITK

- Studied about Diophantine equations, Euclid's Algorithm and Chinese Remainder Theorem.
- Gave a presentation on the various ways to solve Diophantine Equations and their applications.

## Data Mining

Summer, Prof Arnab Bhattacharya

- Studied about regression, clustering and classification
- Text Mining

## SKILLS

Programming	C/C++, Python, X86 , MIPS, ROS, OpenCV, Octave, R, SQL
Web	Django, JavaScript, HTML, CSS
Utilities	Bash, Git, GDB, L <sup>A</sup> T <sub>E</sub> X, Sublime, Vim
Platforms	Windows, Linux(Ubuntu), Arduino, Android, FPGA

## RELEVANT COURSES

### Completed

Introduction to Programming**	Partial Differential Equation	Linear Algebra**
Introduction to Electrodynamics	Multivariable Calculus*	Abstract Algebra
Introduction to Classical Mechanics	Discrete Mathematics	Thermodynamics
Introduction to Electronics	Logic in Computer Science	

### Ongoing

Data Structures and Algorithms	Probability and Statistics	Computer Organization
Computer System Security	Computer Laboratory	Introduction to Economics

\* : A\* Grade for exceptional performance

\*\* : Batch Highest

## POSITIONS

### Secretary, Programming club IITK

- Helped organize Linux Installation Drive, Freshers Programming Contest and other activities.
- Helped in the functioning of the club by organizing contests and lectures on various topics.

### Secretary, Science Coffee House

- Part of a Hobby Group that regularly meets to discuss various scientific topics.

### Project Mentor, ACA IITK

- Mentoring 6 students on a project on System and Cyber Security.

## MISCELLANEOUS

- Google Devfest | Made a weather and sports application for Android.
- Electromania | Made an Egg-Basket game using Digital IC's and logic gates.

## References

- [1] AUV-IITK. Autonomous underwater vehicle.
- [2] Django. Django unchained.