

Shubham Agrawal

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Educational Qualifications:

Year	Degree	Institute/School, City	Performance
2016*	B.Tech, CSE	IIT Kanpur	8.6/10
2012	Class XII CBSE	Tagore International School, Jaipur	89%
2010	Class X CBSE	Tagore International School, Jaipur	9.8/10

*expected year of graduation

Scholastic Achievements:

- Secured an **All India Rank-155** in **IIT-JEE 2012** and **All India Rank-105** in **AIEEE 2012**
- Awarded the prestigious **Kishore Vigyan Protsahan Yojna(KVPY)** fellowship by the Department of Science and Technology, Government of India in the year 2012
- Secured an **All India 4th** position in **National Science Olympiad 2012**
- Secured an **All India 11th** position in **International Mathematics Olympiad 2012**
- Achieved an All India Rank-268 in NSTSE-2011

Areas of Interest:

- Image Processing
- Web Development

Projects:

- **Video Surveillance**
Summer Project mentored by Prof. Harish Karnick (May 2014-June 2014)
 - The project involved improving the video surveillance system for traffic monitoring in the campus of IIT Kanpur
 - Recognized useless frames from the camera feed and **extracted “interesting” frames** from the video to **reduce the storage space** required for data
 - Analysed and implemented adaptive **background subtraction algorithms** – **static frame difference**, **median background subtraction** and **mixture of Gaussians** method (MOG) for background modelling
 - Implemented the **Voila-Jones object detection** framework for classifying the interesting objects using Haar features
 - **Extracted candidate licence plate areas** from the images as a first step towards Licence Plate Recognition. The candidate areas were **optimised** for character recognition using **morphological operations**
- **Jutja.com**
Start-up (March 2014 - Ongoing)
 - **Co-founder** of a **start-up jutja.com**, a project management website with mind-mapped tasks
 - **Part** of a **start-up jutja.com**, a project management website with mind-mapped tasks
 - Designed the user interface of the website and currently working as a front-end developer
 - Implemented the mind-mapped visualization of tasks using Vivagraph library in JavaScript
 - The website uses single-page interface to avoid reloading of webpage
- **Online C Compiler**
Summer Project mentored by Prof. Amay Karkare (May 2014 -June 2014)
 - Developed a website to compile and run c programs online
 - Application uses IITK vyom server to login
 - Integrated Ace Editor Plugin for proper code formatting
 - Introduced a section in the website to practise different programming problems
- **E-Glove**
Summer Project under Electronics Club, IITK (May 2013 – June 2013)

- Designed an **electronic wearable glove** which uses hand gestures to **control mouse and keyboard**
- Used accelerometer and flex sensor to detect hand gestures
- Implemented simulation of mouse and keyboard using a C program
- **Instifreaks**
Application developed in Yahoo! HackU 2013 (22-25 August 2013)
 - Developed an android reminder app to wake up the user to attend lecture on time
 - The app firstly initiates an alarm. If user does not attend the alarm, it sends a “wake me up” message to user’s friends

Technical Skills:

- **Coding Languages:** C, C++, Python, Perl, Java, Bash, HTML, JavaScript, CSS, XML, MySQL, PHP, Ruby, Rails, Node.js
- **Other Tools:** Git, Latex, GNU Octave
- **Operating Systems:** Windows, Linux

Extra-Curricular Achievements:

- Won **1st prize** in **Electromania** (made a snake game) in **Techkriti’13**, Annual technical festival of IIT Kanpur
- Secured **2nd position** in **Embedded** (made a bubble burst game), **Takneek’13**
- Achieved **2nd position** in **Electromania** in Takneek’12, made a frog game using basic ICs

Relevant Courses:

Theory of Computation*	Operating Systems*
Data Structures And Algorithms	Algorithms*
Computing Laboratory	Computer Organization
Probability And Statistics	Fundamentals of Computing
Linear Algebra	Discrete Mathematics

*Courses to be completed by Dec’14

Position of Responsibility:

- **Coordinator ECDC**, Techkriti’14
 - Successfully organised four events with an overall participation of over 500 participants
 - Increased the popularity of events by designing posters and videos for the event
- **Secretary** of Electronics Club
 - Organized hall level workshops and worked in a team to organize a hall level competition
 - Guided and mentored the students on different projects and competitions
- **Secretary** of Public Relations in Antaragni’13
 - Ensured a smooth conduct of all the events organized under the Public Relations
 - Managed the hospitality of the esteemed judges throughout the events