**Shubham Agrawal** Homepage: <http://home.iitk.ac.in/~shubhag>

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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.**
* 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 andimplemented 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**, Techkritit’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.