

# SRIJAN R. SHETTY

Senior Undergraduate, Dept. of Computer Science and Engineering

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SKILL SET	LANGUAGES	JavaScript (Expert), Python (Proficient), C++ (Proficient), C (Proficient), R (Intermediate)
	WEB DEV	HTML5, CSS, SQL and NoSQL, AngularJS, Nodejs
	TOOLS	Git (Expert), Shell Scripting (Proficient), Vim (Expert), LaTeX (Proficient)

## EDUCATION

CURRENT	B. Tech, COMPUTER SCIENCE AND ENGINEERING, Indian Institute of Technology, Kanpur	9.6/10.0
JULY 2011	12 <sup>th</sup> Board, CBSE Board, The Emerald Heights International School, Indore	91.4%
JULY 2009	10 <sup>th</sup> Board, ICSE Board, The Laurels School International, Indore	95.4%

## WORK EXPERIENCE

Multi Factor Authentication in OpenVPN 2014 - 2015  
MOZILLA WINTER OF SECURITY, Guillaume Destuynder, Professor Dheeraj Sanghi [Wiki]

- One of the **eleven** teams all over the **world** to be selected as a part of Mozilla's Winter of Security Initiative 2014.
- The objective of the project was to implement true **arbitrary multi-factor authentication** support in **OpenVPN**; and to implement **session-support** for the additional factors.
- The project presentation is archived at <https://air.mozilla.org/mwos-2014-openvpn-mfa/>.
- The wiki for the project is located at [https://wiki.mozilla.org/Security/Mentorships/MWoS/2014/OpenVPN\\_MFA](https://wiki.mozilla.org/Security/Mentorships/MWoS/2014/OpenVPN_MFA)

Research Intern MAY-JULY 2014  
MICROSOFT RESEARCH INDIA, Bangalore

- Analysed the implementations of different distributed systems and databases architectures like **Google MapReduce**, **Google FileSystem**, **Google MillWheel** Yahoo! **PNUTS**, **Amazon DynamoDB**, **Apache Hadoop**, **Apache Storm**, **Microsoft Dryad**, and **Microsoft DryadLINQ** to understand the design decisions involved.
- Used **TPL Dataflow** and **Lightweight Tasks** to implement concurrent pipeline processing of messages in CScale to preserve processing order of partially ordered messages. Performed **performance testing**, **failure testing** of the existing infrastructure.

Software Development Intern MAY-JULY 2013  
AURUS NETWORKS', Bangalore

- Ported the legacy flash based web player in **CourseHub** – Aurus Networks' MOOC offering – to a technology agnostic **HTML5/JavaScript** web player leading to a uniform cross-platform viewing experience.
- Developed a **XMPP** based **real-time chat service** using Jabber framework, for conversations during live lectures.

## COURSE PROJECTS

JavaScript to MIPS Compiler WINTER 2013-2014  
COMPILERS, Professor Subhajit Roy [GitHub]

- Implemented an end-to-end ECMAScript 5.1 compiler for the MIPS architecture with support for first class functions, anonymous functions, static types, type annotations, recursion and nested functions. [<https://github.com/srijanshetty/javascript-compiler>]

Hindi author attribution WINTER 2013-2014  
ARTIFICIAL INTELLIGENCE, Professor Amitabha Mukherjee [GitHub]

- Presented a poster on Opinion Word Expansion and Target Extraction through Double Propagation, Guang Qin, Bing Liu, Jiajun Bu, Chun Chen that was nominated as the best poster by all students.
- Generated a Hindi literature corpus consisting of works by Tagore, Vibhuti Narayan, Premchand, Sarat Chattopadhyay and Dhamarvir Bharati.
- Clustered a sample set of multiple Hindi authors using K-means unsupervised clustering to achieve F-scores in the range of 90-97% for each author.
- Classified each author using Support Vector Machine using Radial Basis Kernel function and achieved an F-score of 90-95% for each author.
- Performed Multiple Discriminant Analysis on the data for a quantitative comparison with word collocations; there was no appreciable difference in the results with the F-scores increasing only marginally. [<https://github.com/srijanshetty/author-attribution>]

- Extended the standard system call library of NachOS and implemented system calls pertaining to Fork, Exec, Join, Yield, Sleep and Exit. [\[https://github.com/srijanshetty/nachos-syscalls\]](https://github.com/srijanshetty/nachos-syscalls)
- Implemented process scheduling algorithms: UNIX Scheduling, First in First Out, Round Robin, Shortest Job First and Non-pre-emptive job scheduling to assess their relative performances. [\[https://github.com/srijanshetty/nachos-scheduling\]](https://github.com/srijanshetty/nachos-scheduling)
- Programmed page replacement algorithms: Random Page Allocation, First in First Out, Least Recently Used(LRU) and LRU Clock to evaluate relative performances under difference scenarios. [\[https://github.com/srijanshetty/nachos-final\]](https://github.com/srijanshetty/nachos-final)

**P2P File Sharing and Streaming and IP Spoofing**

MONSOON 2013-2014

COMPUTER NETWORKS, Professor Dheeraj Sanghi

[\[GitHub\]](#)

- Conceived and implemented a peer-to-peer protocol for file and media transfer in Node.js to share data over any LAN. [\[https://github.com/srijanshetty/nodesock\]](https://github.com/srijanshetty/nodesock)
- Generated raw IP packets with spoofed IP addresses to exploit test machines with ARP Poisoning, Smurfing and SYN Flooding.

**8-bit General Purpose Computer on a FPGA**

WINTER 2012-2013

COMPUTER ORGANIZATION, Professor Subhajit Roy

[\[GitHub\]](#)

- Designed and programmed a simple **Instruction set Architecture (ISA)** for a 8-bit General Purpose Computer with a **load-store** architecture on **Xilinx Spartan 3 FPGA** using System Verilog. Demonstrated recursion, looping and conditionals on the Computer by using a simple assembly language.

**INDEPENDENT PROJECTS****GNU/Linux Exploration**

SUMMER 2012-2013

Programming Club, IIT Kanpur

[\[Wiki\]](#)

- Explored and documented the various facets of **GNU/Linux** like the file system, process management, memory management, shell interface etc to serve as a reference for the Student Community.

**VS-3, Electronic Voting**

WINTER 2014-2015

Election Council, IIT Kanpur

[\[GitHub\]](#)

- Designed and created a new electronic voting system in consultation with the **Students' Senate** to facilitate smooth electronic voting in the campus.
- The voting system was subsequently used in Students' Gymkhana General Elections, Hall 8 HEC Elections, Hall 2 HEC Elections and Hall 4 HEC Elections.

**OARS**[\[Site\]](#)

- Scraped** the institute **academic records** to create a database of all courses offered by the institute to create an AngularJS based **course search** over the existing legacy course search.

**GYPH**[\[Site\]](#)

- GYPH or Get Your Personal Homepage, eases the process of creating minimalistic websites for students by providing a WYSIWYG website creator.**editor**.

**ShuffleRun**[\[GitHub\]](#)

- Pitched ShuffleRun, a **music player** which selects tracks on the basis of the user's running speed; recieved honourable mention at **Yahoo! HackU 2013**.

**SCHOLASTIC ACHIEVEMENTS, SCHOLARSHIPS AND CONFERENCES**

2011-2014	Received an <b>A* grade</b> , for exceptional performance in <b>Systems and Network Security; Computer Networks; Computer Organization; Logic for Computer Science; Fundamentals of Computing; Introduction to Philosophy</b>
2012-2013	<b>Academic Excellence Award</b> , IIT Kanpur.
2011-2012	<b>Academic Excellence Award</b> , IIT Kanpur.
MAY 2011	Secured All India rank <b>1937</b> in Joint Entrance Exam (JEE)
JAN 2011	Kishore Vaigyanik Protsahan Yojana ( <b>KVPY</b> ) Fellowship
JAN 2010	Qualified <b>Regional Mathematics Olympiad</b> (RMO)
DEC 2009	<b>CSIR Programme on Youth for Leadership in Science</b> held at Advanced Materials Research Institute, Bhopal

**LEADERSHIP AND ARTISTIC SKILLS**Active blogger at [srijanshetty.quora.com](https://srijanshetty.quora.com)[\[Blog\]](#)

Hacker, Navya, FOSS Group IIT Kanpur

[\[Site\]](#)

- Promoted the **FOSS initiative** in campus by organizing **student lectures** and meet-ups.
- Built student-centric applications like **Course Search** and **Student Search**, to circumvent their legacy institute counterparts.

#### Chief Election Officer, Election Council, IIT Kanpur

2014 - 2015

- Conducted General Elections, Student's Gymkhana 2014 and Girls Representative Elections, Students' Gymkhana 2014.
- Developed a new voting software from ground up to cater to the needs of IIT Kanpur.

#### Head, Major Events and Competitions, Antaragni '14

2014 - 2015

- Orchestrated Roadtrip – the National Campaign of Antaragni '14, under which national prelims for Nukkad, Dance, Quiz and Synchronicity were held in Pune, Mumbai, Chennai, Bangalore, Chandigarh, Bhopal, Lucknow, Kolkata, and Kanpur.
- Negotiated with leading academies of Dance, Musicals, and Fine Arts to provide mentorships, and other non-monetary incentives to the outstanding cultural performers in Antaragni under the banner of **Dream On** campaign.
- Coordinated the conduction of **fifty competitions and nine major events** with a team comprising of over **thousand volunteers**. Initiated and organized Mr. & Ms. Fresher's competition and introduced Chreo Night in Antaragni's arsenal of competitions.
- Organized a **blood donation camp** for the residents of IIT Kanpur to promote awareness about road accidents. Mobilized information about **road safety** through infographics and questionnaires via Antaragni's nation wide social campaign **Zara Sambhal Ke**.

#### Hospitality Coordinator, Antaragni '13

2013 - 2014

- Managed a team of **40 secretaries and 80 volunteers**, over a span of 8 months and ensured a flawless conduction of the festival.
- Chalked out the logistics of **hospitality and accommodation** of **1500 participants** with four other coordinators. Handled security arrangements during the four days of the Festival from 24<sup>th</sup> to 27<sup>th</sup> October.

Member, Gymkhana Review Committee

2013 - 2014

Editor-in-chief, Vox Populi, the campus newsletter.

2013 - 2014

Senator, Students' Senate, IITK Y11 batch.

2012 - 2013

## VOLUNTEER WORK

#### Member, Institute Anti Ragging Committee

2014 - 2015

- Appointed as a member of the Institute Anti Ragging Committee, a **10 member committee** responsible for welfare of the newly admitted freshmen.
- Worked in tandem with the office of the Dean of Student Affairs, to organize sessions on **easing the transition of freshmen**. Ensured institute norms regarding humane treatment of freshmen are properly conveyed to all senior batches and worked towards the enforcement of those norms.

#### Tutor, English Proficiency Programme

2013 - 2014

Professor Bhaskar Das Gupta

- Worked as a **English tutor** in the pilot English Proficiency Programme to help **under-privileged students** obtain a functional knowledge of English.

Academic Mentor, Fundamentals of Computing, Professor Sumit Ganguly

2012 - 2013