

# Saksham Sharma

Computer Science and Engineering – IIT Kanpur

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## Educational Qualifications

<b>Bachelor of Technology</b> : Indian Institute of Technology Kanpur - CPI: <b>10.0/10.0</b>	July'14-Present
<b>Senior Secondary - CBSE</b> : D.A.V. Public School, Amritsar - Overall percentage: <b>97.6%</b>	2014
<b>Secondary - CBSE</b> : D.A.V. Public School, Amritsar - Overall grade: <b>10.0/10.0</b>	2014

## Academic Achievements and Scholarships

○ Institute Rank <b>1</b> , IIT Kanpur (CPI 10.0/10.0 in all 4 semesters)	2014-Present
○ All India Rank <b>10</b> in Joint Entrance Exam Mains 2014 among 1.5 million candidates	2014
○ All India Rank <b>138</b> in Joint Entrance Exam Advanced 2014 among 150,000 candidates	2014
○ Academic Excellence Award, IIT Kanpur	2014-15
○ Aditya Birla Group Scholarship recipient, awarded to 15 IIT freshmen.	2014
○ Kishore Vigyanik Protsahn Yojna (KVPY) Scholar, Dept of Science and Technology, Govt of India	2013
○ National Talent Search (NTSE) Scholarship awardee, by NCERT, Govt of India	2010
○ National top 400 in National Standard Examination in Physics in grade 11 and 12.	2012-13
○ Selected for INSPIRE Scholarship Scheme (Dept of Science and Technology, Govt of India).	2014

## Projects and competitions

○ <b>Automated Accuracy improvement for Floating Point Expressions</b> <i>Max Planck Institute for Software Systems, under Dr. Eva Darulová</i>	May'2016-July'2016
<ul style="list-style-type: none"><li>- Developed and evaluated a tool (in Scala) to rewrite mathematical expressions to lower floating point errors, thus improve accuracy for scientific and embedded applications</li><li>- Obtained successful results, improving expressions by 50%, tested on expressions from various sources</li><li>- Part of a larger tool being developed to optimize numerical programs</li><li>- Gave a talk on my work and results to the Programming Languages group</li></ul>	
○ <b>Full Stack Developer</b> IIT Kanpur	May'2015-Present
<ul style="list-style-type: none"><li>- Working on a scaleable web-app in a polyglot environment; using Scala with Akka, Elasticsearch, TypeScript, Node.js, Haskell, Angular2 to implement various functionalities on the backend and frontend</li><li>- Implemented a complete search component using Elasticsearch, Node.js, Scala, TypeScript and Docker</li></ul>	
○ <b>Microsoft code.fun.do 2014 and 2015</b> Winning team member twice	Jan'2015 and Sep'2016
<ul style="list-style-type: none"><li>- <i>Fresher</i> Made a graph plotting app from scratch for implicit 2D mathematical functions on Windows Phone.</li><li>- <i>Sophomore</i> Made a frontend to an open source program simulation code for Microsoft Windows.</li></ul>	
○ <b>ABU Robocon 2015</b> Supervisor: Dr. Bhaskar Dasgupta	Oct'2014-Mar'2015
<ul style="list-style-type: none"><li>- Worked on making 2 semi-autonomous robots capable of playing badminton on a full court.</li><li>- Image-processing to track the shuttle, predict trajectory. Used Arduino and Odroid for robot control.</li><li>- Used stereo-vision, and later Microsoft Kinect to source depth data.</li><li>- Finished 11th among 85 teams from all over India, at ABU Robocon '15, Pune</li></ul>	
○ <b>Microsoft Build The Shield 2016</b> Capture The Flag hacking contest	Mar'2015
<ul style="list-style-type: none"><li>- Qualified National Online round, a Capture The Flag competition focused on Security and Offensive Hacking</li><li>- National 10th in the onsite finals at Microsoft Campus Hyderabad</li></ul>	
○ <b>Microsoft code.fun.do Finalists Forum 2015</b> National 5th in Coding Milestone	May'2015-Jul'2015
<ul style="list-style-type: none"><li>- Developed an app to help users learn programming in their spare time.</li><li>- Implemented a frontend app using C# for Windows Phone</li><li>- Wrote backend web service (Online Judge) in Node.js to compile, run and verify user submitted programs.</li></ul>	

## Work and Volunteer Experience

- **Development Intern** *under DoFA IIT Kanpur, Prof. Manindra Agarwal* May'15-July'15
  - Was adjudged as one of the best interns as a freshman.
  - Worked on a scaleable web application with a large technology stack, in a team setup.
- **Coordinator** *Programming Club, IIT Kanpur* Apr'16-Present
  - Rewrote, deployed and populated Programming Club website <https://pclub.in>
  - Helped organize the Science and Technology Council Summer Camp '16
- **Secretary** *Programming Club, IIT Kanpur* Apr'15-Present
  - Organized Freshers' Programming Contest, setting and testing algorithmic questions.
  - Conducted beginner programming workshops for students.
  - Promoted Linux use and Installed Linux on multiple systems during Linux Installation Fest.
- **Software Corner Manager** *Techkriti '16, IIT Kanpur* Dec'15-Mar'16
  - Designed and implemented a new Esoteric Programming language based on Assembly, and hosted a national level competition *Chaos* on the same.
  - Wrote an Online Judge for, and organized IHPC, a National High Performance Computing competition, hosted on CDAC's Param Yuva II Supercomputer.
  - Handled logistics and organization of multiple other Software related events.
- **Technical Secretary** *Association for Computing Activities, IIT Kanpur* Aug'15-Present
  - Helped in increasing familiarity of Computer Science Freshers with their department
  - Mentored a group of 5 students for a semester project on Introduction to Functional Programming
- **Student Guide** *Counselling Service, IIT Kanpur* July'15-Present
  - Helped 9 students adjust to the rigours of college life, by providing emotional support along with counselling.
  - Organized the Orientation Programme '15 for the fresher batch.

## Technical Skills

Web Development	Node.js (with Express), JavaScript, Scala (with Akka), Angular
Programming Languages	C/C++, Scala, Python, Haskell, Java, Lisp, x86 Assembly
Operating Systems	Gentoo Linux, Arch Linux, Ubuntu, Microsoft Windows
Utilities	Emacs and Vim both, Git, GDB, Shell Utilities and scripting in Linux, $\LaTeX$
Platforms	Windows Phone, Microsoft Kinect, Arduino

## Relevant Courses

Data Structures and Algorithms (A*)	Computer Organization (A*)	Introduction to Programming (A*)
Tools for Computing (A*)	Computer Systems Security (A)	Discrete Mathematics (A)
Abstract Algebra (A)	Logic in Computer Science (A)	Probability and Statistics (A)

A\* grade for exceptional performance

## Interests

Computer Systems Security	Open Source Development	Programming Languages and Approximation
Functional Programming	Web Development	Linux System administration
Capture the Flag contests		

## Miscellaneous

- Sporadic blogger at my blog <http://acehack.org> about Linux, programming etc
- Occasional contributor to public Open Source projects on Github <https://github.com/sakshamsharma>.
- Multiple personal projects on Github, including blogs, an Emacs plugin, utility repositories.
- Administer various servers in IIT Kanpur, including the community Gentoo mirror, a Gentoo-based Navya server, and the server VM of Programming Club. Deploy and automate services for campus
- Attended a full paper-reading seminar-like course on Approximate Computing during Summer '16 at the Max Planck Institute, Germany
- A Linux Enthusiast, tinker around and tweak my Linux installation in my free time
- Various research talks, seminars and guest lectures attended in Germany
- NASA AMES Space Settlement Design Contest: Team Leader and International First Prize Winner in Grade 9-10.