Saksham Sharma

Computer Science and Engineering – IIT Kanpur

✉ saksham0808@gmail.com • ☎ http://acehack.org • ⊕ sakshamsharma

✉ sakshams@(cse).iitk.ac.in

Educational Qualifications

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

Academic Achievements and Scholarships

- Institute Rank **1**, IIT Kanpur (CPI 10.0/10.0 in all 4 semesters) — *2014-Present*
- All India Rank **10** in Joint Entrance Exam Mains 2014 among 1.5 million candidates — *2014*
- All India Rank **138** in Joint Entrance Exam Advanced 2014 among 150,000 candidates — *2014*
- Academic Excellence Award, IIT Kanpur — *2014-15*
- Aditya Birla Group Scholarship recepient, 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

- **Automated Accuracy improvement for Floating Point Expressions** — *May'2016-July'2016*
  Max Planck Institute for Software Systems, under Dr. Eva Darulová
  - Developed and evaluated a tool (in Scala) to rewrite mathematical expressions to lower floating point errors, thus improve accuracy for scientific and embedded applications
  - Obtained successful results, improving expressions by 50%, tested on expressions from various sources
  - Part of a larger tool being developed to optimize numerical programs
  - Gave a talk on my work and results to the Programming Languages group

- **Full Stack Developer** *IIT Kanpur* — *May'2015-Present*
  - 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
  - Implemented a complete search component using ElasticSearch, Node.js, Scala, TypeScript and Docker

- **Microsoft code.fun.do 2014 and 2015** *Winning team member twice* — *Jan'2015 and Sep'2016*
  - *Fresher* Made a graph plotting app from scratch for implicit 2D mathematical functions on Windows Phone.
  - *Sophomore* Made a frontend to an open source program simulation code for Microsoft Windows.

- **ABU Robocon 2015** *Supervisor: Dr. Bhaskar Dasgupta* — *Oct'2014-Mar'2015*
  - Worked on making 2 semi-autonomous robots capable of playing badminton on a full court.
  - Image-processing to track the shuttle, predict trajectory. Used Arduino and Odroid for robot control.
  - Used stereo-vision, and later Microsoft Kinect to source depth data.
  - Finished 11th among 85 teams from all over India, at ABU Robocon '15, Pune

- **Microsoft Build The Shield 2016** *Capture The Flag hacking contest* — *Mar'2015*
  - Qualified National Online round, a Capture The Flag competition focused on Security and Offensive Hacking
  - National 10th in the onsite finals at Microsoft Campus Hyderabad

- **Microsoft code.fun.do Finalists Forum 2015** *National 5th in Coding Milestone* — *May'2015-Jul'2015*
  - Developed an app to help users learn programming in their spare time.
  - Implemented a frontend app using C# for Windows Phone
  - Wrote backend web service (Online Judge) in Node.js to compile, run and verify user submitted programs.

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.

○ **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 counseling.
- 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.