

Saksham Sharma

Computer Science and Engineering
Bachelor of Technology
Indian Institute of Technology Kanpur



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WORK EXPERIENCE

Accuracy Improvement of Expressions

*Max Plank Institute for Software Systems, Germany
Fellowship, under Dr. Eva Darulová May'16-July-16*

- Developed and evaluated a Scala tool to rewrite mathematical floating-point expressions and increase their accuracy using a genetic algorithm
- Obtained successful results, improving expression errors by ~50%, for scientific and embedded uses.

Full Stack Developer *May'15-Present*

NYC Office IIT Kanpur, Prof. Manindra Agarwal

- Adjudged as one of the best interns as a freshman
- Implemented various features in a large scale polyglot web application with an extensive technology stack in a team setup (Phabricator, Git)
- Continue coding, as a full-stack developer; managing the search component in Node.js, Scala, Elasticsearch, TypeScript, Haskell

PROJECTS

moVi: Mobile Video Protocol *Aug'16-Now*

Undergraduate Project, Prof. Sandeep Shukla

- Developing a UDP based video communication protocol robust to network, IP changes.
- Using stateless UDP, a custom video synchronization protocol to ensure reliability and security.

Anonymous secure pair-matching platform

Prof. P. Kurur, Prof. S. Nandakumar

- Designed, implementing an algorithm for secure, anonymous matching of couples, where end users put zero trust in the server (admin) and its code.
- Using homomorphic two party computation (aided by an un-trusted server) and asymmetric encryption to ensure confidentiality and integrity.

HTTP-Over-Protocol *Prof. Sandeep Shukla*

- HTTP wrapper for bypassing proxy restrictions and using arbitrary protocols (acehack.org/hop)
- Top 5 on Github trending (C++) for 2 days

Badminton playing robots *Oct'14-Mar'15*

ABU Robocon '15, Prof. Bhaskardas Gupta

- Worked on 2 semi-autonomous full-size badminton playing bots using Image-processing, Kinect and Stereo Vision to track and predict shuttle path
- Overall 11th among 85 teams in national round

Microsoft code.fun.do hackathon *Winner twice*

- An app to parse, plot implicit mathematical graphs
- National 5th in Finals Coding milestone. Platform to learn programming, on a self made online judge

EDUCATION

2014 – Now **Bachelor of Technology**

IIT KANPUR

CPI/CGPA: 10.0/10.0

AWARDS AND ACHIEVEMENTS

Now **Institute Rank 1, IIT Kanpur**

CPI: 10.0 in 4 Semesters

2015 **Academic Excellence Award**

IIT Kanpur, 2014-2015

2014 **All India Rank 10**

JEE Mains, 1.5 million candidates

2014 **All India Rank 138**

JEE Advanced, 150,000 candidates

2014 **Aditya Birla Scholarship**

Among 15 top students from all IITs

2014 **National Merit, Overall 97.6%**

Grade 12 National Examination, CBSE

2013 **KVPY Scholarship awardee**

Scholarship by IISc, Govt. of India

2010 **National Talent Search (NTS)**

Scholarship by Govt. of India

COURSEWORK

Data Structures and Algorithms A*

Computer Organization A*

Introduction to Programming A*

Tools for Computing A*

Computer Systems Security A

Discrete, Abstract maths, Logic A

Computer Networks i

Operating Systems i

A*: grade for exceptional performance i: Current

TECHNICAL SKILLS

C/C++, Python, Node.js, Scala, Haskell

WEB Express, Akka, JavaScript

O.S. Gentoo, Arch Linux, Ubuntu

UTILS Emacs, Vim, Linux utils, Git, Docker, Kubernetes, GDB, Elasticsearch

MISCELLANEOUS

- **Blog** about networks, coding at acehack.org
- Contribute to **Open Source** on Github
- Coordinator of Programming Club, InfoSec IITK, organize contests, CTFs, lectures (pclub.in)
- Administer servers in IIT Kanpur; deploying, automating services for campus community
- Microsoft Build The Shield, National 10th in the final round of CTF