

Shivansh Rai

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EDUCATION

IIT KANPUR BACHELOR OF SCIENCE IN MATHEMATICS AND SCIENTIFIC COMPUTING 2014 – ONGOING	
CLASS XII 2014 • CBSE Percentage: 88.6%	CLASS X 2012 • CBSE CPI: 10.0

TECHNICAL SKILLS

PROGRAMMING LANGUAGES

C • C++ • Bash • Python • Java • Verilog

WEB DEVELOPMENT

JavaScript • TypeScript • Angular2
Scala(with Akka) • Django • PHP

UTILITIES

Git • GDB • Packetdrill • Docker
ElasticSearch • Docker • NASM • Vim

OPERATING SYSTEMS

Linux (Ubuntu) • Unix (FreeBSD)

COURSEWORK

Data Structures and Algorithms
Operating Systems *
Computer Networks *
Data-Driven Program Analysis *
Theory of Computation
Computer Systems Security
Computer Organisation
Multiagent Systems and Game Theory
Computational Methods
Fundamentals of Computing

(* ongoing courses)

INTERESTS

Operating Systems	Computer Networks
Formal Verification- -techniques	Systems Security
Web Development	Functional- -programming

AWARDS

- **Capture the Flag Codefest '16**, IIT BHU:
Ranked 44 among 648 participants
- **Takneek '15**, IIT Kanpur: First runner up
in Web-Dev, an annual web development
competition ([link](#))
- Successfully cleared **National Schools
Computer Science Competition '10**

PROJECTS AND EXPERIENCE

GOOGLE SUMMER OF CODE '17 github.com/shivansh/smoketestsuite FREEBSD | MAY 2017 – ONGOING

- Working on building an infrastructure to automate generation of smoke tests for all the utilities in the FreeBSD base system
- Discovered and fixed **1 bug** in the implementation of **ln(1)** utility in FreeBSD ([link](#))

GOOGLE SUMMER OF CODE '16 github.com/shivansh/tcptestsuite FREEBSD | MAY 2016 – AUGUST 2016

- Developed test scripts for regression testing of TCP/IP stack implementation in FreeBSD using Google's **packetdrill**
- Discovered and reported **2 bugs** in the behavior of TCP stack implemented in FreeBSD

GOOGLE DEVFEST '16 WINNER github.com/shivansh/cram IIT KANPUR | OCTOBER 2016

- Developed a **Django** based web-app using the k-nearest neighbors algorithm to suggest courses for students to take in their upcoming semester based on their previous coursework
- Performed data mining of over 4500 student's coursework from campus databases to extract relevant information

FULL STACK DEVELOPER

NEW YORK OFFICE, IIT KANPUR | SEPTEMBER 2015 – ONGOING

- Worked on a large scale polyglot web application with an extensive technology stack, in a team setup.
- Developed features for frontend using **Angular2** and features for backend in **Scala** using the reactive framework **Akka HTTP**
- Made features using **ElasticSearch** in JavaScript for indexing and searching data

UNDERGRADUATE PROJECT, BOOLEAN SATISFIABILITY

PROF. SUBHAJIT ROY | JUNE 2017 – ONGOING

- Working on the problem of generating a sudoku puzzle with specific difficulty by reducing moves into a boolean satisfiability problem
- Using the Python API of SAT solver **Z3** and the Java API of QBF solver **DepQBF** for evaluating possible solutions in a search space

EXTRACURRICULAR ACTIVITIES

MENTOR | NEW YORK OFFICE SUMMER INTERNSHIPS

APR 2016 – JULY 2016

- Mentored **3 interns** in developing a JavaScript based Chrome Extension for stream item clipping and Angular2 based front-end for an online information management portal

MENTOR | PROGRAMMING CLUB, IIT KANPUR

MAY 2016 – JULY 2016

- Mentored **2 teams** of 4 and 6 students for the successful completion of their summer projects