

# Ayush Bansal

SECOND YEAR UNDERGRADUATE · COMPUTER SCIENCE AND ENGINEERING

Indian Institute of Technology

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## Education

Year	Degree	Institution(Board)	CGPA/%
July'16 – Present	B.Tech, CSE	Indian Institute of Technology, Kanpur	8.5/10.0
2016	CBSE – XII	Saint Josephs School, Kota (CBSE)	95%
2014	CBSE – X	Saint Pauls School, Kota (CBSE)	94%

## Honors & Awards

2016	<b>All India Rank 187</b> , Joint Entrance Exam Advanced, 200,000 candidates	India
2016	<b>All India Rank 571</b> , Joint Entrance Exam Mains, 1.5 million candidates	India
2016	<b>All India Rank 52</b> , KVPY Scholarship, Indian Institute of Science and Government of India	Bangalore, India
2015	<b>Merit Certificate, National Top 1%</b> , Indian National Chemistry Olympiad	India
2015	<b>Merit Certificate, National Top 1%</b> , Indian National Astronomy Olympiad	India

## Work Experience

### New York Office, IIT Kanpur

Kanpur, India

INFRASTRUCTURE MANAGEMENT, SUPERVISOR PROF. MANINDRA AGARWAL

May 2017 - Present

- Worked on a scalable microservice based web application with an extensive technology stack.
- Deployed microservices utilizing Docker container, CoreOS Container Linux, JenkinsCI, and have maintained the cluster on Kubernetes.
- Configured and deployed Persistent Volume Storage System.
- Technologies used: Kubernetes, Scala with Akka, Docker, Nginx, CoreOS Applications, Rook with Cephfs, Heketi with Glusterfs.
- Summer Internship continued as a volunteer and peer mentor.

## Projects

### Implementation of Dynamic Multi-Level Paging

IIT Kanpur

ADVISOR PROF. DEBADUTTA MISHRA

Oct. 2017 - Present

- Improve performance by creating a better **Virtual Address** organization.
- Find wastage (internal fragmentation) in page-table pages by studying the page table usage of different applications.
- Results gathered from application's page-table usage are used to create a better page-table organization.

### Ethical Hacking: Learnt Basic Exploits for participating in CTFs

IIT Kanpur

PROGRAMMING CLUB

Summer'2017

- Learnt exploitation techniques like buffer-overflow, integer-overflow, format strings and heap exploits.
- Used debuggers and knowledge of x86 Assembly language to exploit binary files.
- Performed various web attacks like sql-injection, XSS and CSRF.
- Learnt basics of Cryptography.

### Linux From Scratch: Compiled Linux System from Source and Built a Package Manager

IIT Kanpur

ASSOCIATION OF COMPUTING ACTIVITIES

Feb. 2017 - Apr. 2017

- Created a **Customized Linux** based operating system by compiling all packages from scratch using the host machine's kernel.
- Built a **package manager** in python which fetched the dependencies of packages and created a dependency list based on packages installed.

## Relevant Coursework

Introduction to Programming

Discrete Mathematics

Logic in Computer Science

Abstract Algebra (A\*)

Data Structures and Algorithms (i)

Computer Organization (i)

Programming Tools and Techniques (i)

A\*: Grade for Exceptional Performance    i: In progress

## Skills

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**Languages** C/C++, Python, Scala, Haskell, Golang, Javascript

**Utilities** Linux shell utilities, Git, Docker, Kubernetes, Akka with Scala, GDB,  $\text{\LaTeX}$ , Vim

**Operating Systems** Arch Linux, Ubuntu

## Extracurricular Activity

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**Leader** GOOGLE'S DEVELOPER STUDENTS CLUB, IIT KANPUR

*July 2017 - Present*

**Secretary** PROGRAMMING CLUB, IIT KANPUR

*Apr. 2017 - Present*

## Miscellaneous

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- Enthusiastic about Systems and learning new stuff about Linux architecture, Programming languages, networking and security.
- Contribute to open source projects and maintain projects on Github.