

# Aniket Pandey

SECOND YEAR UNDERGRADUATE · MATHEMATICS AND SCIENTIFIC COMPUTING

Indian Institute of Technology Kanpur

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## Educational Qualifications

Year	Degree	Institution(Board)	CGPA/%
July'16	B.S Maths	Indian Institute of Technology, Kanpur	7.4/10.0
2016	AISSCE – XII	K.V R.K.Puram Sec-2, New Delhi	94.0%
2014	AISSE – X	K.V R.K.Puram Sec-2, New Delhi	10/10

## Honors & Awards

### COMPETITIVE EXAMS

- 2014 **All India Rank 1**, KVS Junior Mathematics Olympiad, with a record score of **92/100** *KVS, India*
- 2013 **All India Rank 1**, FIITJEE Talent Reward Examination, perfect score of **214/214** *FIITJEE India*
- 2012 **All India Rank 90**, National Talent Search Examination, **NTSE Scholarship** *NCERT, India*
- 2014 **All India Rank 214**, Kishore Vaigyanik Protsahan Yojana, **KVPY Fellowship** *IISc Bangalore*
- 2016 **All India Rank 908**, JEE Advanced, among **200,000** candidates *IIT Guwahati*

### OLYMPIADS

- 2014 **Regional Mathematics Olympiad**, Selected for **INMO** from Delhi Region *HBCSE, Mumbai*
- 2014 **Junior Science Olympiad**, Among the top **35** merit students in **INJSO** *HBCSE, Mumbai*
- 2015,16 **Astrophysics Olympiad**, Among the top **25** merit students in **INAO-Sr**, Twice *HBCSE, Mumbai*

## Work Experience

### Google Summer of Code, FreeBSD

*Kanpur, India*

#### THE FREEBSD PROJECT

*Apr. 2018 - Present*

- Built a Regression Test-Suite for FreeBSD's audit subsystem using libraries from Automated Testing Framework and ported it within the existing Test-Suite.
- Contributed more than 400 test-cases for 50 system calls classified in TCP/IP & UDP sockets, File I/O, process control and device management.
- Used various BSD kernel functions and libbsm APIs to test the audit events by I/O multiplexing on a special clonable device, /dev/auditpipe.
- Collaborated with FreeBSD committers around the world to enhance the security features of the operating system.

### Security Analyst Intern

*New Delhi, India*

#### LUCIDEUS TECHNOLOGIES

*Nov. 2017 - Jan. 2018*

- Developed and deployed a secure social networking platform in LAMP Stack. Assessed its vulnerability against OWASP top 10 attacks and improved the security.
- Extensively used VAPT tools like Metasploit, Wireshark, Xerosploit, Nessus, Maltego and many more.
- Researched cyptographical model implementation in Network and Wireless Security, analysed WEP encryption weaknesses and exploited using aircrack-ng.
- Reverse engineered Windows applications to understand and mitigate common security flaws.

## Full Stack Web Development

Kanpur, India

PROGRAMMING CLUB

May. 2017 - July. 2017

- Developed a scalable web application for nominations of various posts of Students' Gymkhana, IITK .
- Used Django along with Django-Rest-Framework and PostgreSQL for developing the portal.
- Implemented dynamic heirarchy levels, search feature and multiple model versions in the backend API. Designed a Responsive User Interface from scratch using Bootstrap and jQuery.
- Selected as one of the Top 6 projects from all Science and Technology Clubs to give final presentation.

## Senior Web Executive

Kanpur, India

ANTARAGNI - 17

July'2017 - Oct'2017

- Used the full **MEAN Stack** in Typescript for a fest webapp and its admin control panel.
- Dynamic website with content easily changeable via the control panel. Supported Android App with an API.
- Technologies Used - NodeJS, AngularJS, MongoDB, ExpressJS and more

## Projects

### Computational Complexity Theory

Kanpur, India

SEMESTER PROJECT, ASSOCIATION COMPUTING ACTIVITIES

2nd Semester

- Reading Project on Theory of Computation. Studied about non-deterministic complexity classes eg. NP, NP-Complete, NP-Hard.
- Researched the fundamental working of **Turing Machine** and its properties. Analyzed famous NP-Complete problems, e.g SAT, Hamiltonian Path, Travelling Salesman etc.
- Understood the implication of Complexity Theory in Quantum Computing and Cryptography.

### Graph Theory and Algorithms

Kanpur, India

SEMESTER PROJECT, STAMATICS

3rd Semester

- Undergoing Research project on analyzing various Graph algorithms and their Time-Complexities.
- Investigated famous algorithms like Bellman-Ford , Dijkstra and implemented them in real-life problems.

## Extracurricular Activity

### Stamatics, IIT Kanpur

IIT Kanpur, India

SENIOR WEB EXECUTIVE

April. 2017 - Present

- Developed and deployed the responsive website of Stamatics in Angular with custom domain *stamatics.org*.
- Dockerized the site and maintained the backend with real-time databasing.

### Programming Club, IIT Kanpur

IIT Kanpur, India

SECRETARY

April. 2017 - Present

- Organized an introductory lecture on Python and Web-Scraping for peer students.
- Successfully coordinated with colleagues to install various distros of Linux in students' laptops.
- Prepared recruitment test questions and introductory blogs for Fresher students.

### Hall captain, Marathas

IIT Kanpur, India

TAKNEEK - 17

August. 2017

- Led the pool to victory in the Inter-hostel technical competition, *Takneek*
- Also won the maiden trophies of Astronomy and Programming

## Skills & Interests

**Research Interests** Network & Web Security, Memory Management, Theory of Computation, Algorithms

**Programming** Python, C/C++, TypeScript, PHP, MySQL, Shell, Java, Haskell, Lua

**Web Frameworks** Django, Express.js with Node.js, Codeigniter, Bootstrap, Angular

**Utilities** Git, Vim, GDB, Docker, phpMyAdmin, Linux Shell Utilities,  $\text{\LaTeX}$

## Relevant Coursework

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Probability & Statistics\*  
Introduction to Programming  
Introduction to Electronics

Data Structures & Algorithms\*  
Ord. Differential Equations  
Set Theory & Math. Logic

\*: Ongoing Course

Abstract Algebra\*  
Real Analysis\*  
Electrodynamics

## Miscellaneous

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- Developed an online treasure hunt portal for the annual intra-hostel event Odyssey.
- Cited in The Journal of Open Source Software(JOSS) for contributing to Astropy™
- Maintain a blog at aniketpandey.com ([link](#)) about Linux, Programming and VCS.
- Among the select freshers to complete PClub's *Getting first PR merged* challenge.