

Aniket Pandey

Second Year Undergraduate • Mathematics and Scientific Computing

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EDUCATION

IIT KANPUR

B.S IN MATHEMATICS AND
SCIENTIFIC COMPUTING
July 2016-2020 CPI: 6.8

K.V R.K.PURAM, SEC-2

AISSCE, CBSE, OVERALL: 94.0%
May 2016 | New Delhi, India

RELEVANT COURSES

Operating Systems (i)
Computer Architecture (i)
Computer Systems Security
Designing Verifiably Secure Systems (i)
Data Structures & Algorithms (i)
Introduction to Programming
Probability & Statistics
Introduction to Electronics
Set theory & Mathematical Logic
Real Analysis & Complex Analysis
(i : Ongoing Courses)

SKILLS

PROGRAMMING

Proficient:

Python • C • C++ • Shell

Familiar:

PHP • SQL • Javascript • Lua
Java • Perl • Typescript • Haskell

OPERATING SYSTEMS

FreeBSD • Arch Linux • Ubuntu
Linux Mint • NetBSD

WEB/FRAEMWORKS

Django • Full MEAN Stack
LAMP Stack • Codeigniter

UTILITIES

Docker • MongoDB • \LaTeX • Vim
Git • GDB • Linux Shell Utilities
ElasticSearch • Kubernetes

MISCELLANEOUS

Secretary, Programming Club IITK

Organized an introductory lecture on
Python and Web-Scraping for peer
students.

Helped install various distos of Linux
in students' laptops during Linux
Install Fest.

Prepared recruitment test questions
and introductory blogs for Freshers.

EXPERIENCE AND PROJECTS

GOOGLE SUMMER OF CODE | APR'18 - PRESENT

The FreeBSD Project | Mentor: Dr. Robert N. M. Watson

- Built a self-contained Regression Test-Suite for FreeBSD's Audit Subsystem.
- Contributed more than **500** test-cases for **180** OpenBSM auditable system calls.
- Developed an automation infrastructure using libbsm(3) APIs within the kernel which does a synchronous polling on /dev/auditpipe to extract out the BSM tokens.
- Completed the proposed work in less than 1/3rd of total duration. Test-Suite with **8500+** SLOC already merged in 12-CURRENT production branch. (LINK)

SECURITY ANALYST INTERN | NOV'17 - JAN'18

Lucideus Technologies | Project Manager: Saket Modi, CEO

- 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.
- Researched cryptographical model implementation in Network & Wireless Security, analysed WEP encryption weaknesses and exploited it using aircrack-ng tool suite.
- Reverse engineered Windows applications to mitigate common security flaws.

COMPUTER ARCHITECTURE SUMMER SCHOOL | JULY'18

Sponsored by AMD & Intel | Prof. Biswabandan Panda

- Analyzed Cache performance and DRAM access patterns of a multicore CPU using trace based architecture simulators like Gem5 and ChampSim, considering various benchmark metrics for Out of Order processing, Branch predictors & ROB size.
- Observed the effect of hugepages on TLB misses in a stimulated virtual memory.
- Compared the performance benchmark of various multithreaded and shared memory matrix manipulation programs written using OpenMP, MPI & CUDA APIs.

STUDENTS' GYMKHANA, IIT KANPUR | MAY'17 - JULY'17

Full Stack Development | Automated Nominations Portal

- Developed a scalable web application for nominations of Students' Gymkhana, IITK.
- Used Django along with Django-Rest-Framework and PostgreSQL database.
- Implemented dynamic heirarchy levels, search feature, django-filter and multiple model versioning in the backend API, extended it to include automated emailing.
- Selected among the **top 6** projects from all SnT clubs to give final presentation.

SENIOR EXECUTIVE, WEB TEAM | APR'17 - MAR'18

Stamatics Association, IIT Kanpur

- Developed and deployed the website of Stamatics in Angular (stamatics.org)
- Dockerized the site and maintained the backend with real-time databasing.

Antaragni 2018, IIT Kanpur

- Used the full MEAN Stack for a fest registration portal and its admin control panel
- Technologies Used - NodeJS, ExpressJS, Angular4, MongoDB (full Typescript)

COMPUTATIONAL COMPLEXITY THEORY | FEB'17 - APR'17

Association of Computing Activities | Prof. Rajat Mittal

- Reading Project on Theory of Computation, Complexity Classes & Cryptography.
- Researched the fundamental working of Turing Machine and its properties
- Analyzed famous NP-Complete problems, e.g. Hamiltonian Path, Travelling Salesman

AWARDS AND ACHIEVEMENTS

2014	AIR 1	KVS Junior Mathematics Olympiad, with a record score of 92/100
2014	AIR 244	KVPY-SA Fellowship Examination, IISc Bangalore
2016	AIR 908	JEE Advanced 2016, conducted by IT-Guwahati
2013	RMO	Qualified Regional Mathematics Olympiad from Delhi Region
2014	INJSO	Amongst the top 36 merit students selected in Junior Science Olympiad
2015	INAO-Sr	Amongst the top 25 merit students selected in Astrophysics Olympiad.