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 (expected)

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/FRAMEWORKS
Django • Full MEAN Stack
LAMP Stack • Codeigniter

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

MISCELLANEOUS

Secretary, Programming Club IITK
Secretary, Astronomy Club IITK
NTSE Scholar, Conducted by NCERT
KVPY-SA Fellow, Sponsered by IISc
Merit in Indian National Astrophysics Olympiad, **thrice**: INAO-14,15,16
Merit in Indian National Junior Science Olympiad: INJSO-2014

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.
- Reimplemented regression tests for audit-viewer utilities, praudit and auditreduce.
- 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 exloited it using aircrack-ng tool suite.
- Reverse engineered Windows applications to mitigate common security flaws.

RESEARCH TRACK EXPLORATION | May'18 - Present
The University of Texas at Dallas | Prof. Latifur Khan

- Research project on the implementation of Cross-Domain Adaptive Framework for Multistream data classification (COMC) in asynchronous data stream mining.
- Working on performance benchmarking of an Entity extraction and Geoparser tool, CLIFF-CLAVIN, in its ability to handle multiple concurrent requests. Performance analysis would be carried out on Jetstream, a scalable cloud environment for XSEDE.

COMPUTER ARCHITECTURE SUMMER SCHOOL | July'18
Sponsered 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