Aniket Pandey

Third Year Undergraduate • Mathematics and Scientific Computing

aniketpandey.com | aniketp@freebsd.org | aniketp | +91-959-988-1876

EDUCATION

IIT KANPUR
B.S in Mathematics and Scientific Computing
July 2016-2020 | CPI 7.01

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
(i : Ongoing Courses)

ACHIEVEMENTS

Secretary, Programming Club IITK

AIR 1: FIITJEE FTRE'13, 214/214

AIR 1: KVS-JMO'14. Scored 92/100

AIR 244: KVPY, Sponsered by IISc

AIR 908: JEE Advanced 2016

Qualified RMO'13 from Delhi region

Merit in Indian National Astrophysics Olympiad, thrice: INAO-14,15,16

Merit in Indian National Junior Science Olympiad: INJSO-2014
(AIR : All India Rank)

RELEVANT SKILLS

PROGRAMMING

Proficient:
Python • C • C++ • Golang

Familiar:
Bash • Javascript • Scala • Lua
Java • Perl • Typescript • Haskell

OPERATING SYSTEMS

FreeBSD • Arch Linux • Ubuntu
Kali Linux • NetBSD • Gentoo

WEB/FRAMEWORKS

Django • Full MEAN Stack
Full LAMP Stack • Codeigniter

UTILITIES

Docker • DTrace • LaTeX • Vim
Git • GDB • Linux Shell Utilities

WORK EXPERIENCE

GOOGLE SUMMER OF CODE'18 | Apr'18 - Present

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

- Built a self-contained Regression Test-Suite for FreeBSD's Audit Subsystem with a cross-platform support for Darwin OS and x86, ARM, Sparc64, MIPS architectures.
- Contributed more than 500 test-cases for 180 OpenBSM auditable system calls.
- Developed an automation infrastructure for the Test-Suite, which synchronously polls on a clonable special device, /dev/auditpipe, to extract out relevant BSM tokens.
- Completed the proposed work in less than 1/3rd of total duration. Entire Test-Suite with 9000+ SLOC count was pushed to 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.

SUMMER RESEARCH FELLOW | May'18 - July'18

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.
- Worked 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.

FULL STACK DEVELOPER INTERN | Feb'18 - May'18

IIT Kanpur - NYC Office | Prof. Manindra Agarwal

- Worked on a scalable polyglot web application with an extensive technology stack.
- Implemented real-time status update feature in the attendance management system.
- Technologies used: DRF, Kubernetes, Elasticsearch, Concourse-CI, Spinnaker etc.

SELECTED PROJECTS

FORMAL VERIFICATION OF INTEL'S SGX | Jul'18 - Present

Course Project : Designing Verifiably Secure Systems

- Developed a password manager using Intel's Software Guard Extensions Enclave.
- Researched on modelling a formal verification of security features of the application.
- Implemented the Rjindael AES-128 bit enclave encryption in Galois/Counter Mode.

AUTOMATED NOMINATIONS WEB-PORTAL | May'17 - July'17

Summer Project | Students' Gymkhana, IIT Kanpur

- 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.

GRAPH THEORY AND ALGORITHMS | Sep'17 - Oct'17

Stamatics Departmental Association | Prof. Amit Kuber

- Researched about Graph traversal and Single Source Shortest Path algorithms.
- Worked on improving the algorithms for finding singly connected components.

COMPUTATIONAL COMPLEXITY THEORY | Feb'17 - Apr'17

Association of Computing Activities | Prof. Rajat Mittal

- Research Project on Theory of Computation, Complexity Classes & Cryptography.
- Explored the fundamental working of Turing Machine and its various properties.