Aniket Pandey

Third Year Undergraduate • Mathematics and Scientific Computing

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Education Details

Indian Institute of Technology, Kanpur
B.S in Mathematics and Scientific Computing
Minor in Computer Systems
July 2016-2020 (expected)

Relevant Projects

Google Summer of Code'18 Apr'18 - Aug'18
The FreeBSD Project Dr. Robert 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 **500+** test-cases for **180** 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**)

The University of Texas at Dallas May'18 - Jul'18
Summer Research Intern (RTE) 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 was carried out on a scalable cloud environment, **JetStream**.

Secure Key-Value File Sharing Jan'19 - Apr'19
Computer Systems Security Prof. Pramod Subramanyan

- Developed an encrypted dropbox-like platform in **Golang**.
- Implemented transitive and anonymous collaboration using AES-CFB, HMAC, RSA based encryption and Argon2 PBKDF.

GemOS: x86 Operating System Aug'18 - Nov'18
OS Course Project Prof. Debadatta Mishra

- Built a **Gem5** simulated x86 operating system with support for context switching, system calls, multithreading, interrupt handlers, RPC and Round-Robin Scheduling of processes.
- Developed an object-store **FUSE** filesystem with LRU cache.

Formal Verification of Intel's SGX Aug'18 - Nov'18
Verifiable Secure Systems Prof. Pramod Subramanyan

- Researched on modelling a formal verification of a password manager using Intel's Software Guard Extensions Enclave.
- Implemented the Rjindael **AES-GCM** 128-bit encryption.

Computational Complexity Theory Jan'17 - Mar'17
ACA Semester Project Prof. Rajat Mittal

- Explored the fundamental working of Turing Machine.
- Analyzed the solutions of famous NP-Complete problems.

Work Experience

Software Engineering Intern May'19 - Jul'19
Cohesity Inc.

- Nunc sed pede. Praesent vitae lectus. Praesent neque justo, vehicula eget, interdum id, facilisis et, nibh. Phasellus at purus et libero lacinia dictum. Fusce aliquet. Nulla eu ante placerat leo semper dictum. Mauris metus. Curabitur lobortis. Curabitur sollicitudin hendrerit nunc. Donec ultrices lacus id ipsum.

New York Office, IIT Kanpur Feb'18 - Jun'18
Backend Developer Intern 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.

Security Analyst Intern Nov'17 - Dec'17
Lucideus Technologies

- Built a secure social networking platform in LAMP Stack.
- Assessed the application's vulnerability against OWASP top 10 attacks and improved the feature 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 common Windows applications.

Relevant Skills

Competent	C, C++, Golang, Python
Familiar	TypeScript, Haskell, Lua, Perl
Web Tech	Django, REST, MEAN, LAMP
Utilities	Shell Utilities, Git, Docker LaTeX, Vim

Scholastic Achievements

2014	**AIR 1**	KVS Junior Mathematics Olympiad
2014	**AIR 244**	KVPY-SA Fellowship, IISc Bangalore
2016	**AIR 908**	JEE Advanced 2016, IIT Guwahati

Position of Responsibility

Senior Executive, Web Team Apr'17 - Mar'18
Stamatics Association, IIT Kanpur

- Developed and deployed the website of Stamatics in Angular.
- Dockerized the site and maintained real-time backend.

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.

Relevant Courses

Data Structures & Algorithms	Advanced Algorithms *(i)*	Operating Systems	Distributed Systems *(i)*	Computer Networks
Computer Systems Security	Computer Architecture *(s)*	Verifiable Systems	Probability & Statistics	Scientific Computing

(i : Ongoing Courses) | *(s : Summer School)*