Aditya Peer

Roll no. 2020355 | aditya20355@iiitd.ac.in
DOB: 7 March, 2002
Address: 43-S, DDA-SFS Flats , Sector-8
Jasola Vihar, New Delhi, 110025
Github

Education

Indraprastha Institute of Information Technology, Delhi CGPA: 9.5
PhD (CSE)
2025
Working at Programmable Networking Lab (PNL)

Amity International School, Noida, Uttar Pradesh Percentage : 91.2%
CBSE, Standard 12, PCM
2018-2020

Amity International School, Noida, Uttar Pradesh Percentage : 95%
CBSE, Standard 10
2017 - 2018

Skills

Expertise Area:	Object-Oriented Programming, UI, Data Structures and Algorithms, Android and Web development, OpenCL,FPGA, Tofino.
Programming Languages:	Java, C++, Python, C, R language, HLS, P4.
Tools and Technologies:	Git, GitHub, Github Actions, Vitis, Visual Studio code, Matlab, Linux, Intellij, Spyder, Vitis, IntelliJ IDEA, PyCharm, PyTorch, Overleaf, JavaFX,Google Collab
Technical Electives:	Operating System, Advanced Programming in Java, Data Structures and Algorithms, Visual Design and Communication, Computer Organization, Analysis and Design of Algorithms, Applied Cryptography.

Publication

Research Paper
Advisor: Dr. Rinku Shah, India
CoDel-ACT: Realizing CoDel AQM for Programmable Switch ASIC. Vedant Bothra, Aditya Peer, Vijay Singh, Mukulika Maity and Rinku Shah.IFIP Networking Conference (IFIP Networking), Thessaloniki, Greece, 2024.

Work Experience

Summer Research Intern (May, 22 - July 22)

Advisor: Dr. Rinku Shah, India
Project: CoDel-ACT: Realizing CoDel AQM for Programmable Switch ASIC

We implemented the fully AQM Algorithm (Codel) over the tofino switch.

Projects

Workload-aware in-network crypto primitives — Team Size-2
Guide : Dr. Rinku Shah — (June, 24 – Present)
Our objective is to implement a suite of cryptographic algorithms on an FPGA board using the OPEN-NIC shell architecture, enabling in-network packet processing at a line rate of 100 Gbps traffic at different Network workloads, efficiently managed by a scheduler.

Real-time analysis of packet queue delays in PDPs (C++) — Team Size-2
Guide : Dr. Rinku Shah — (September, 22 - July, 23)
The objective of this project is to implement AQM algorithms (e.g Codel) over Intel Tofino switch. Fine-grained queue measurements at the switches have a wide range of use-cases such as stopping congestion-related attacks, avoiding conflicting workloads, and deploying AQM (Active Queue Management) schemes. The goal of an AQM technique is to manage switch/router buffers in order to reduce netw ork congestion and/or improve end-to-end latency.

Programmable Networking — (March, 24 - May, 24)
Guide : Dr. Rinku Shah
In this course we learned about Software Defined Networks, learn to program switches using p4 language and optimizations done in traditional kernel network stack for minimum latencies in dynamic network scenario between server and the client. I made a project, using p4 language to program a firewall application on the software bmv2 switch.

Distributed Systems Concept and Design — Individual
Guide : Dr. Dhruv Kumar — (Jan, 24 - March, 24)
In this course we learned about different rpc frameworks such as grpc, rabbitMQ, ZeroMQ. We implemented K-Means using Map Reduce from scratch using grpc. We also implemented Raft Consensus Modified Algorithm System by introducing lease concept to make a distributed system ensuring fault tolerance and consistency. Repository here.

Network Security — Individual
Guide : Dr. BN Jain — (Jan, 23 - March, 23)
In this course, we learned, implemented and developed a deeper understanding of various cryptographic algorithms, such as AES, RSA- based Public Key Distribution Authority (PKDA), Mono-Alphabetic Substitution, Time Stamping Authority (TSA) Server. Repository here.

Positions of Responsibility

Sports coordinator at high School — (2017, 2019)

Awards and Achievements

- Introduction to Human Computer-Interaction, got an A+ score in the course.
- Google data analytics course certificate from coursera.
- Data Structure and algorithms course from Coding Ninjas.
- SURF Excellence Award on the Project: Realizing CoDel AQM for Programmable Switch ASIC, Summer [2023]

Interests and Hobbies

- I have an interest in Coding to develop my logic skills stronger and love to play chess.
- Cricket, cycling, Kabaddi, football, basketball, and listening to music.

Declaration: The above information is correct to the best of my knowledge.
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Date: September 24, 2025