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EDUCATION

- **Indian Institute of Technology Kanpur** · Bachelor of Technology, Aerospace Engineering *Present*
  CPI: **9.25/10** · Minors in Algorithms and Theory of Computation · Recipient of the Academic Excellence Award 2019, 2020
- **St. Joseph's College, Prayagraj** · Class 10th (ICSE): **97.80%** · Class 12th (ISC): **98.25%** · *2018*
  Highest score in the district in both the exams · **100%** score in Computer Science in both the exams

WORK EXPERIENCE

Open Printing *May 2020 - August 2020*
Accepted as a Student Developer for Google Summer Of Code
- Worked on the huge code base of **Qt Print Support** to integrate the features of Common Print Dialog Backends.
- Ensured **abstraction** and **binary compatibility** of the library while adding an entirely new functionality into it.
- Also fixed bugs in other printing libraries like the CUPS backend and system-config-printer.

National Interdisciplinary Center for Cyber Security and Cyber Defence of Critical Infrastructures *Dec '19 - June '20*
Student Research Associate, under Prof. Sandeep K. Shukla
- Built tools to aid in the research on **honeypots**.
- Automated the orchestration of the **Kubernetes** cluster that is used as bait for fooling and engaging the attackers.
- Responsible for deploying pods **in real time** as per the attack vector obtained by analysing the received payloads.
- Also involved in **VAPT** activities for finding new **CVE**s.
- Helped organise a CTF on **SCADA ICS** at Nullcon 2020.

New York Office, IIT Kanpur *June 2019 - August 2019*
Backend Developer (Intern), under Prof. Manindra Agarwal
- Worked on a large web app with an extensive tech stack.
- Ideated and developed an entire scalable private messaging feature that uses **ScyllaDB** for quick storage of messages.
- Built an independently-running URL shortening **microservice** which can be accessed through its **gRPC** server.
- Created REST APIs on the **gorilla/mux** framework to perform CRUD operations on a **cockroach** database.
- Worked on a customized deployment pipeline, using arcanist and **Phabricator** for code-review.

New Office Automation, DOIP *December 2018*
Student Research Associate, under Prof. Arnab Bhattacharya
- Found and reported major **security** flaws in Pingala.
- Thereafter officially inducted into the project, and performed a **vulnerability assessment** of the platform.
- Discovered multiple ways to gain unauthorized access to data, and suggested effective ways to resolve them.
- Implemented a modified version of the **Gale-Shapeley algorithm**, in Java, to efficiently allocate courses to the students based on their preferences.

SKILLS

Programming: Go, C++, Java, Python, Javascript
Web: Express.js, React.js, Gin, Gorilla, Django, jQuery
Databases: PostgresSQL, MongoDB, ScyllaDB, Redis
Misc: Git, Phabricator, Bash, Docker, Kubernetes, gRPC

POSITIONS OF RESPONSIBILITY

- **Coordinator**, Programming Club, IITK *2020 - Present*
  Leading a team of 20+ secretaries to manage club activities. Initiated the Sport Programmer of the Month Challenge.
- **Project Mentor**, ACA, IITK *Jan - April 2020*
  Taught the basics of cybersecurity to 14 first year students.
- **Secretary**, Quiz Club, IITK *2019 - 2020*
  Conducted the Sci-Tech Quiz and helped organize other quizzes. Also represented IITK in various quiz events.

KEY PROJECTS

IITKBucks Programming Club Summer Project
○ dryairship/IITKBucks *May - July 2020*
- Mentored a group of 14 students in building their own clients for a custom **blockchain based cryptocurrency**, spanning across languages like Java, Javascript and python.
- Taught mentees about the basics of blockchains, decentralization, digital signatures, proof-of-work, and related topics.
- Developed my own client in **Go** and also wrote tests for it.

Online Election Manager Project Track, ESC101A
○ dryairship/online-election-manager *February - April 2019*
- Built a **cryptographically secure** online voting system.
- Implemented secure and **anonymous** vote storage through a triple encryption mechanism using **ElGamal** key pairs.
- The system can **prove** the validity of the votes and results.
- **Deployed** and used in IITK Students' Gymkhana Elections

Smart Purchase App CSE@IITK Summer of Code
○ dryairship/SRATRC-Smart-Purchase-Web-App *May - July 2019*
- Led a team of 5 students in developing a **MERN stack** web app for inventory management and finance tracking.
- Used local storage for **data caching** to reduce network usage, thereby enabling the app to work in rural areas.
- **Deployed** and used by the **NGO Vitraag Vigyaan**.

QuizKitty Facebook Hackathon: Messaging
○ dryairship/quiz-kitty *May - June 2020*
- Developed a quizzing **messenger bot** for the competition.
- Used an open source trivia database to fetch the questions.
- Used **Facebook Graph API** to read and send messages.
- Integrated with the Messenger platform using a **webhook**.
- **Deployed** and available to chat at https://m.me/quizkitty.

PROGRAMMING ACHIEVEMENTS

- **StackOverflow**: 5.4K+ reputation, 185K+ reach *~6 years*
- Codeforces: Regular participant, max. rating 1849 *~2 years*
- Rank 118, **ICPC** Amritapuri **Regional Contest** *2019*
- Rank 63, **ICPC** Kanpur **Online Contest** *2019*
- 2nd, Fresher's Programming Contest, IITK *2018*
- 3rd, Blackbox (**esolang** programming contest), IITK *2018*
- Participated in, and found a **security** flaw that allowed extraction of hidden test cases in **Google foo.bar** *2017*
- Among the 126 students across India to have qualified for the **Indian National Olympiad in Informatics** *2017*

RELEVANT COURSES

Fundamentals of Computing (A∗)	Linear Algebra and ODEs
Data Structures and Algorithms	Algorithms II
Randomised Algorithms (*i*)	Modern Cryptology (*i*)
Computer Systems Security (*i*)	Language and Society (A∗)
Principles of Programming Languages	

A∗: Grade for Exceptional Performance · *i*: In Progress

EXTRA CURRICULAR

- **The Outstanding Freshman** Awardee, IITK *2019*
- 2nd, **Water Polo**, Inter IIT Aquatics Meet, IITKGP *2019*
- 3rd, **Sci-Tech Quiz**, Inter IIT Cultural Meet, IITR *2018*
- 2nd, **inQuizitive** (Freshers' Science Quiz), Takneek *2018*