

# PRIYDARSHI SINGH

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## EDUCATION

Year	Degree	Institution	Score	Honours
Present	B.Tech, AE	Indian Institute of Technology, Kanpur	9.32/10.0	Academic Excellence Award 2019,2020
2018	ISC – XII	St. Joseph's College, Prayagraj (CISCE)	98.25%	Prayagraj District Topper
2016	ICSE – X	St. Joseph's College, Prayagraj (CISCE)	97.8%	Prayagraj District Topper

## WORK EXPERIENCE

### Amazon May 2021 - July 2021

Software Development Engineer - Intern

- Designed and developed a system to send bulk notifications to technicians on the "Selling Services on Amazon" app.
- Built a scalable, Java-based, **serverless microservice** backend and a React-based frontend.

### Open Printing May 2020 - August 2020

Accepted as a Student Developer for Google Summer Of Code

- Integrated the features of CPDB in **Qt Print Support**.
- 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 a Kubernetes cluster as per the attack vector obtained from real-time payload analysis.
- Also involved in **VAPT** activities for finding new **CVEs**.
- 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 independent 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.

### 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-Shapley algorithm**, in Java, to efficiently allocate courses to the students based on their preferences.

## RELEVANT COURSES

Fundamentals of Computing (A*)	Algorithms II
Data Structures and Algorithms	Theory of Computation ( <i>i</i> )
Intro. to Game Theory ( <i>i</i> )	Modern Cryptology
Computer Systems Security	Randomised Algorithms
Language and Society (A*)	Non-Classical Logic (A*)
Principles of Programming Languages	Data Mining ( <i>i</i> )
A*: Grade for Exceptional Performance · <i>i</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

## 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**.
- Taught mentees about the basics of blockchains, decentralization, digital signatures, proof-of-work, and related topics.
- Developed my own client in Go, using language features like **goroutines** and **channels** for concurrent mining of blocks

### Online Election Manager Project Track, ESC101A

🐙 dryairship/online-election-manager February - April 2019

- Built a **cryptographically secure** online voting system.
- Used client-side cryptography for secure, anonymous voting.
- 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.
- Deployed** and available to chat at <https://m.me/quizkitty>.

## PROGRAMMING ACHIEVEMENTS

- StackOverflow**: 5.7K+ reputation, 250K+ reach ~7 years
- Codeforces: Regular participant, max. rating 1849 ~3 years
- 1st, Security Hackathon, Inter IIT Tech Meet, IITG 2021
- 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

## SKILLS

**Programming**: Go, C++, Java, Python, Javascript

**Web**: Express, React, Gin, Gorilla, Django, jQuery

**AWS**: CDK, Lambda, S3, SQS, DynamoDB, Cloudwatch

**Misc**: Git, Bash, Docker, Kubernetes, gRPC, nmap

## POSITIONS OF RESPONSIBILITY

- Coordinator**, Programming Club, IITK 2020 - 2021  
Led a team of 20+ secretaries to manage club activities. Initiated the Sport Programmer of the Month Challenge. Managed deployments and devops of club projects.
- 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.