

Devanshu Singla

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ACADEMIC DETAILS

Year	Degree/Exam	Institute	CPI/%
2019-23*	B.Tech (Computer Science and Engineering)	IIT Kanpur	9.4
2019	CBSE(Class XII)	Modern Vidya Niketan, Sec-17, Faridabad	96.4/100
2017	CBSE(Class X)	St. Thomas Sr. Sec. School, Faridabad	10/10

ACADEMIC ACHIEVEMENTS

- **Academic Excellence Award** for exceptional performance in Academics at IIT Kanpur (2019)
- Secured **All India Rank 191** in **JEE Advanced 2019** among 2.3 Lakh eligible aspirants (2019)
- Secured **All India Rank 182** in **JEE Mains 2019** among 11,57,125 candidates (2019)
- Recipient of **Kishore Vaigyanik Prostahan Yojana (SX)** fellowship award with **AIR 131** (2018-19)
- Qualified for **INMO** organised by HBCSE (2018-19)

PROJECTS

- **Movie Recommender**  (May '21)
Self Project | Collaborator: Amit Kumar Yadav
 - Created a **movie scraper** in **Python** to scrape movies from imdb according to user preferences and selects good movies according to google likes present on main google page.
 - Used python libraries like **Scrapy** for creating web spider which scrapes movies from imdb and **elenium** for scraping dynamic google pages.
- **Creating Game Theoretic-Models to analyze Biodiversity Conservation Problems**  (Nov '20 - Dec '20)
CS711 Course Project | Course Instructor: Swaprava Nath
 - Modelled **3** biodiversity problems as different **Normal Form Games** and analysed them from their **Nash Equilibrium**.
 - Devised a new game, **Recursive Games with Conditions** and analysed its Nash Equilibrium for a subset of strategies, and used this result to analyse one of the biodiversity problems.
- **Private Computation Using Cryptographic Primitives**  (May '20 - Jul '20)
Summer Project | Science and Technology Council IITK | Mentor: Aditya Gulati
 - Implemented **Distributed Point Function (DPF)** based on **Function Secret Sharing (FSS)** in Rust.
 - Learned about various Cryptographic Primitives used for Private Computation like **Function Secret Sharing, Fully Homomorphic Encryption, Yao's Garbled Circuits** and **Shamir's Secret Sharing**.
 - Explored **Multithreading, Memory Optimizations** and **Ownership Laws** in Rust language.
 - Used various libraries like **gtest, grpc** and **google/benchmark** for making tests and benchmarking.
- **Campus Discuss**  (Apr '20 - Jul '20)
Summer Project | Programming Club IITK | Mentors: Aditya Gulati, Nilay Majorwar
 - Implemented frontend of webapp **Campus Discuss** to be used as a platform for posting college events and related discussions through comments in a **6** membered group with two mentors.
 - Used various **JS** libraries like **ReactJs, Redux, Material UI** to create various React components like recursive comments section, topbar, etc.

• Chromebot

(Apr '20 - Jun '20)

Self Project | Collaborator: Yatharth Goswami

- Implemented a **chrome extension** in **JavaScript** with an interface of bot linked with a local **NodeJS** server made using **ExpressJS** to perform certain tasks involving local resources and browser.
- Developed utilities like setting alarm for competitive programming (cp) contest and scraping codeforces contest and creating files with code template, testcases and outputs in local system.

• Infosec IITK

(Jan '20 - Apr '20)

Association of Computing Activities IITK | Mentors: Varun Goyal, Priydarshi Singh

- Explored infosec related skills like **Reverse Engineering**, **Binary Exploitation**, **Steganography**, **Cryptography** and **Web Exploitation**.
- Learned about **x64 assembly language** and used analysing tools like **radare 2**, **ghidra** and **cutter**.
- Participated in ctfs like **picoCTF** and solved security related challenges on sites like **OverTheWire**.
- Used **Wireshark** to analyse captured network packets, **Audacity** to analyse wave signals and various other tools like **Steghide**, **Stegsolve**, etc for steganography.

TECHNICAL SKILLS

- **Programming:** C++, C, Python, Rust, JS, Bash
- **Libraries:** Numpy, ReactJS, NodeJS, Express, Scrappy, Selenium.
- **Tools:** Git, Radare2, Ghidra, Cutter, \LaTeX .

RELEVANT COURSES

Data Structures and Algorithms	Linear Algebra and ODE	Modern Cryptology
Software Development	Real Analysis and Calculus	Probability for Computer Science
Fundamentals of Computing	Quantum Computing	Game Theory and Mechanism Design
Neural Networks and Deep Learning*	Algorithms-II [#]	Introduction to Machine Learning [#]
Deep Reinforcement Learning [#]	Operating Systems [#]	

* \equiv online courses # \equiv upcoming courses.

POSITION OF RESPONSIBILITY

• ACA Project Mentor

(Apr '21 - Ongoing)

ACA | Co-Mentors: Sarthak Rout, Naman Gupta | IITK

- Taught basics of cyber security to **45** students through live lectures and online resources.
- Helped them get started with Reverse Engineering and Binary Exploitation.

• Student Guide

(Nov '20 - Ongoing)

Counselling Service | IITK

- Helped **five** freshman to get acquainted with campus life and academics at IIT Kanpur.
- Part of the organizing team for the Orientation programme for the incoming Batch of 2020