

Devanshu Singla

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SELECTED PROJECTS

CREATING GAME THEORETIC-MODELS TO ANALYZE BIODIVERSITY CONSERVATION PROBLEMS

Course Project | Mentor: Dr. Swaprava Nath | Nov. 2020 - Dec. 2020 [\[Link\]](#)

- Analysed three biodiversity problems by modelling them as **Normal Form Games** and finding their **Nash Equilibrium**.
- Devised a new type of game named **Recursive Games with Conditions** and used it to analyse one of the problems.

PRIVATE COMPUTATION USING CRYPTOGRAPHIC PRIMITIVES • SCIENCE AND TECHNOLOGY COUNCIL IITK

Summer Project | May. 2020 - Jul. 2020

[\[Link\]](#)

- Implemented **Distributed Point Function (DPF)** library using the principles of **Function Secret Sharing (FSS)** in Rust.
- Learned various Cryptographic Primitives like **Function Secret Sharing (FSS)**, **Fully Homomorphic Encryption (FHE)**, **Yao's Garbled Circuits** and **Shamir's Secret Sharing (SSS)**.
- Explored **Multithreading**, **Memory Optimizations** and **Ownership Laws** in **Rust** language.
- Used libraries like **gtest** for creating unit tests and **google/benchmark** for benchmarking final code.

CAMPUS DISCUSS • PROGRAMMING CLUB, IITK

Summer Project | Apr. 2020 - Jul. 2020

[\[Link\]](#)

- Implemented frontend of **webapp**, **Campus Discuss** to be used as a platform for posting college events and related discussions through comments as part of **6**-membered group.
- Developed React components like **recursive comment section** for web-app using libraries like **ReactJs** and **Redux**.

INFOSEC • ACA, IITK

ACA Project | Jan. 2020 - Apr. 2020

- Explored infosec related skills like **Reverse Engineering**, **Binary Exploitation**, **Web Exploitation** and **Cryptography**.
- Learned about **assembly language** and learned to use binary analysing tools like **radare 2**, **ghidra** and **cutter**.
- Participated in various ctfs like **picoCTF** and solved security related challenges on sites like **OverTheWire**.

TECHNICAL SKILLS

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

EDUCATION

B. TECH, CSE

IIT Kanpur | Exp. 2023

CPI: 9.4/10.0

MODERN VIDYA NIKETAN SEC-17, FARIDABAD

Grade XII, CBSE: **96.4%**

ST. THOMAS SR. SEC. SCHOOL, FARIDABAD

Grade X, CBSE: **10 CGPA**

ACHIEVEMENTS

- **Academic Excellence Award**
For academic year 2019-20
- **AIR 191** | JEE Adv. 2019
- **AIR 182** | JEE Mains 2019
- **AIR 131** | KVPY 2018 (SX)
- Qualified for **INMO** 2019

RELEVANT COURSES

- Data Structures and Algorithms
- Fundamentals of Computing
- Software Development
- Neural Networks and Deep Learning*
- Modern Cryptology
- Game Theory and Mechanism Design
- Probability for Computer Science
(*) - online

OTHER PROJECTS

- Movie Recommender | Self Project | May 2021 [\[Link\]](#)
- Chromebot | Self Project | Apr. 2020 - Jun. 2020 [\[Link\]](#)

RESPONSIBILITIES

PROJECT MENTOR

ACA IITK | Apr. 2021 - Present

- Taught basics of cyber security to **45** students through live lectures.

STUDENT GUIDE

Counseling Service IITK | Nov. 2020 - Present

- Helped **five** freshmen to get acquainted with campus life and academics at IIT Kanpur.