Devanshu Singla

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ACADEMIC DETAILS

Examination	University	Institute	Year	CPI/%
Graduation	IIT Kanpur	IIT Kanpur	2019-23*	9.27
Intermediate/+2	CBSE	Modern Vidya Niketan, Sec-17, Faridabad	2019	96.4/100
Matriculation	CBSE	St. Thomas Sr. Sec. School, Faridabad	2017	10/10

FIELDS OF INTEREST

- Algorithms and Data Structures, Cryptography, Game theory, and Mathematics.

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

- **Creating Game Theoretic-Models to analyze Biodiversity Conservation Problems** (Nov '20 - Dec '20)
  CS711 Course Project | Course Instructor: Swaprava Nath

  - Analysed three biodiversity problems through separate **Normal Form Games** and inferred results from **Nash Equilibrium** present in them.
  - Devised a new type of game named **Recursive Games with Conditions** and used it to analyse one of the biodiversity problems.

- **Private Computation Using Cryptographic Primitives** 🎧 (May '20 - Jul '20)
  Institute Summer Project | Mentor: Aditya Gulati | IITK

  - Implemented **Distributed Point Function (DPF)** library using the principles of **Function Secret Sharing (FSS)** in Rust Programming Language.
  - 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**.
  - Learned about **Multithreading**, **Memory Optimizations**, **Ownership Laws** in Rust language.
  - Used various libraries like **gtest**, **grpc**, **google/benchmark** for making tests and benchmarking.

- **Infosec IITK** (Jan '20 - Apr '20)
  ACA Project | Mentors: Varun Goyal, Priydarshi Singh | IITK

  - Learned about techniques like **SQL injection**, **Binary exploitation**, and **Steganography**.
  - Learned about **x64 assembly language** for **Reverse Engineering** and **Binary Exploitation** challenges and used tools like **gdb**, **radare2** and **cutter**.
  - Used **Wireshark** to analyse captured network packets, **Audacity** to analyse wave signals and various other tools like **Steghide**, **Stegsolve**, etc for steganography.

- **Campus Discuss** (Summers 2020)
  Institute Summer Project | Mentors: Aditya Gulati, Nilay Majorwar | IITK

- Implemented a **webapp** using JS libraries like **ReactJS**, **Redux**, **Material UI**, etc.
- Implemented a **React Native app** using **Expo** and used **Typescript** for better type checking.

- **Chromebot** ⏻ (Summers 2020)
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 tasks on computer and browser.
  - Tasks implemented include setting alarm for competitive programming (cp) contest, scraping codeforces contest and creating files with code template in local system, etc.

TECHNICAL SKILLS

- **Programming:** C++, C, Rust, Python, Bash

- **Web:** HTML, CSS, JavaScript, ReactJS, NodeJS, React-Native.

- **Misc.:** NumPy, Git, LaTeX, Cutter, Radare2, Markdown.

RELEVANT COURSES

Fundamentals of Computing	Real Analysis and Calculus*	Linear Algebra and ODE
Data Structures and Algorithms	Game Theory and Mechanism Design	Introduction to Electronics
Modern Cryptology#	Quantum Computing#	Computer Organization#
Software Development#		

$* \equiv A^*$ for exceptional performance $\# \equiv$ ongoing/ upcoming courses

POSITION OF RESPONSIBILITY

- **Student Guide** (Nov '20 - Ongoing)
Counselling Service | IITK

  - Helped six 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