

# Ritika Nagar

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## EDUCATION

- **Indraprastha Institute Of Information Technology** New Delhi, India  
*Bachelor of Technology - Computer Science* May 2020 - June 2024
- **Army Public School, Delhi Cantt** New Delhi, India  
*CBSE 12th (92%), CBSE 10th (96%)* 2018 - 2019

## EXPERIENCE

- **Research Intern at Network Security Lab - IIITD**  
*Guide: Dr. Rinku Shah and Dr. Sumit Darak* Sep 2022 - Present
  - **5G Crypto Frameworks:** Development of In Network Crypto Frameworks for 5G Network Applications.
  - **Algorithm Optimization:** Increased the efficiency of Hardware from 52% to 83% by optimising the crypto algorithms.
  - **Docker Benchmarking:** Utilized Docker and shell scripts for comprehensive benchmarking results.
  - **Hardware Synthesis:** For performance improvement, implemented algorithms using HLS.
  - **Programming Tools:** Used C/C++, Docker, Vitis HLS, Vivado, FPGA, SmartNIC
- **Teaching Assistant - IIITD**  
*Course: Data Structure & Algorithms, Basic Electronics* Nov 2022 - June 2023
  - **Instructional Support:** Mentored 300+ students, simplifying complex topics, and facilitating understanding.
  - **Responsibility:** Conducting weekly labs and Tutorials, collaborated with faculty to refine teaching methodologies.

## AWARDS AND ACHIEVEMENTS

- Secured all India **Rank 5** in **National Level ACM-W Programming contest'24** out of 1500+ womens.
- Secured **10 GPA** for three continuous semesters under BTP project (**Recommended for best BTP work**)
- Secured a global rank of **3325/12500** in google kickstart (2022) round F.
- Competed and Qualified for google code jam 2022 among 25k programmers
- **Academic Excellence Award** for outstanding performance in the 12th CBSE Board.
- Completed **FOSSASIA Summit Cloud Skills Challenge** organized by Microsoft.

## SKILLS SUMMARY

- **Tech Stack :** MySQL, Ubuntu, Wireshark, Jupyter Notebook, Github, Pycharm, NS3, gem5, git, Vivado, Vitis HLS
- **Languages:** C/C++ (15K lines), Python (10K lines), Java, Javascript
- **Web Dev :** HTML, CSS, Next.js, ReactJS, NodeJS, TailwindCSS, MongoDB, Mongoose, Firebase, MySQL
- **CS Courses :** Data Structure and Algorithms, Database Management Systems, Operating System, Object Oriented Programming in Java, Computer Networks, Analysis and Design of Algorithms

## PROJECTS

- **ShopAtEase (Guide: Dr. Mukesh Mohania):** Designed an Online Shop Portal that caters to multiple stakeholders like Customers, Employees, Suppliers, and Share Holders.reverse multimedia search to small & mid scale enterprises.  
Tech: HTML, Python, MYSQL Team size: 4 (January '22)
- **HybridHarbor (Guide: Dr. Rajiv Ratn Shah):** Model that uses both collaborative and context-based filtering techniques to recommend product. With the help of user's browsing history, it provides a personalized recommendation.  
Tech: HTML ,CSS, Python, Bootstrap. Team size: 6 (January '23)
- **Resource Verse (Web Development) :** Build a one-stop platform to help the freshers explore their careers by providing trusted resources and roadmaps of 6 domains. Introduced a features section to boost student internship preparation with a list of 450 frequently asked questions and 50+ opportunities. Tech: HTML, CSS, JavaScript, and Bootstrap. (October' 22)
- **Will Hero (Guide: Dr. Vivek Kumar):** Built a game using JavaFX from scratch where the player faces different hurdles, needs to fight with Orcs, etc. Designed a UML Class Diagram for designing the structure of classes. Applied various OOPs concepts and suitable design Patterns. Tech: Java, JavaFX, FXML, CSS, Gradle (November '21)

## VOLUNTEER EXPERIENCE

- **President of Consulting Club at IIITD**  
*Collaborated with professionals to organize consulting workshops, providing valuable insights.* Mar 2022-Dec 2022
- **Core and Event Team Member at Finance Club at IIITD**  
*Organized three major events, conducted and delivered various workshops.* Oct 2021-Jan 2022
- **Web Development team Literary club at IIITD**  
*Ideated, designed and developed the official website of the Literary club.* Sep 2022-Dec 2022