

# Najiya Naj

PhD Scholar, IIITD

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## Research Interest

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My research explores systems and networks, focusing on wireless communication and IoT systems. I work on improving network performance and applying machine learning to address communication challenges.

## Education

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Dec 2022     **Pursuing PhD**, Systems and Network Lab, Indraprastha Institute of Information Technology, Delhi, **CGPA 8.55**.

**Coursework:** Wireless Network, Mobile Computing, Object Oriented Programming and Design, Machine Learning and Research Methodology.

2019 - 2021     **Master of Engineering in Information Technology**, Goa College of Engineering, Goa, 85.31%, **CGPA 8.96**

2014 - 2018     **Bachelor of Engineering in Computer Science**, Vishwavidyalaya Engineering College Ambikapur, Chattishgarh, 83.71%, **CGPA 8.8**, (**Graduated with honors**)

## Experience

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2023 - 2024     **Teaching Assistant**, Indraprastha Institute of Information Technology, Delhi ([IIIT-Delhi](#)) (Fundamentals of Database Systems, Advanced Programming, Mobile Computing, Object Oriented Programming and Design)

2021 - 2022     **Assistant Professor**, Computer Science Engineering, [Chandigarh University](#), Punjab (Fundamentals of Computer Programming and Object Oriented Programming using C++)

## Honors and Scholarships

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2022 - 2026     **PhD**, Received the AICTE Doctoral Fellowship (ADF) for a 4-year PhD program.

2019 - 2021     **Master of Engineering**, Received AICTE PG scholarship for 2-year master program.

2019             **GATE**, Qualified Graduate Aptitude Test in Engineering

## Publications

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- Naj, Najiya, and Amogh Sanzgiri. "An IoT based real-time monitoring of water quality system." Proceedings of the International Conference on IoT Based Control Networks & Intelligent Systems-ICICNIS. 2021. [PDF](#)
- Naj, Najiya, and Pinto, M., "Deployment of Traffic Control Management System using IoV", International Journal of Emerging Technologies and Innovative Research (www.jetir.org — UGC and issn Approved), ISSN:2349-5162, Vol.8, Issue 4, page no. pp683-691, April-2021, [PDF](#)

## Skills

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- **Programming:** C, C++, Java, Python
- **Tools:** Android Studio, Git, Docker, Visual Studio Code, Eclipse
- **Miscellaneous:** Algorithms, Data Structures, Problem Solving

## Current projects

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- **Cloud-Assisted Autonomous Driving Over Wireless Network:**  
The work focuses on autonomous driving that rely on large machine learning models for safety-critical decisions, but these models demand significant computational resources. So, we are designing adaptive systems for autonomous driving that combine local and cloud-based computation to address the challenges of high GPU memory usage, intensive computational demands and dynamic network conditions. My work aims to offload resource-intensive computations to the cloud, ensuring that the system remains reliable and efficient even under varying network conditions.
- **Remote Operation of Vehicle: Do Satellite Networks Outperform Cellular Networks?**  
The project deals with the remote control of self-driving cars. It focuses on the tradeoff between video quality and latency while prioritizing the video feed based on the teleoperator's head movements and identifying the most important video parts for decision-making. We tested remote driving using traces from cellular and satellite networks. The results show that satellite networks have higher latency but fewer outliers, which can make them more reliable for remote driving.
- **Web Measurement for Transfer Size and Page Load Time Analysis:**  
The project focuses on improving mobile web browsing performance by analyzing factors that impact page performance, such as transfer size and page load time. The goal is to propose solutions that enable mobile devices to perform better without relying on external dependencies. By addressing these performance factors, the project aims to optimize mobile browsing, ensuring a smoother and more efficient user experience.

## Master's Projects

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- **An IoT based Real-Time Monitoring of Water Quality System:**  
The project leverages IoT to monitor water quality in aquaculture in real time, ensuring the safety of aquatic species by tracking parameters like pH, turbidity, and temperature. It improves traditional methods with instant data collection, analysis, and alerts

for quick action. Sensors transmit data to the cloud via ThingSpeak, triggering notifications to owners through IFTTT applets for timely intervention.

- **Deployment of Traffic Control Management System using IoV:**

The project enhances urban mobility by integrating IoT into vehicles, creating the Internet of Vehicles (IoV). IoV enables vehicles to communicate with each other and their environment, improving traffic management and safety. The focus is on using sensors to analyze traffic patterns, prevent accidents, and ensure passenger safety.