

# ANWESHA KAR

## System Software Engineer

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📍 Bangalore, India

in <https://www.linkedin.com/in/anwasha-kar-36598a167/>

## EXPERIENCE

### System Software Engineer, NVIDIA Ethernet, Physical Layer Device, MCU Firmware

📅 July 2024 – Present 📍 Bangalore, India

- Leading **MCU Firmware Development** to interface with **Ethernet PHYs** in **bringup of latest Ethernet Dongle**, ensuring compatibility and performance.
- **API integration** to enhance connection stability, focusing on parameters: **delay, packet loss, and jitter**.

### Research Assistant, NeWS Lab IIT Hyderabad Supervisor: Bheemarjuna Reddy Tamma and C. Siva Ram Murthy

📅 Aug 2021 - June 2024 📍 Hyderabad, India

- Enhanced the **5G MAC Layer** for seamless communication between **terrestrial and non-terrestrial services** by proposing a congestion-aware relay, maintaining a **CBR of 0.63** and **expanding coverage by 17%**.
- Developed **architectural support** in **NR V2X** to manage **periodic and aperiodic traffic**, reducing V2X latency through a scheduling system that **cut aperiodic traffic latency by 89.36%** and **periodic latency by 40.2%**.
- Optimized the Semi-Persistent Scheduling (SPS) Algorithm in **5G NR V2X** to prioritize emergency communications, boosting response times for critical cases like Emergency Vehicle Alerts with a **3.2% improvement in Packet Reception Rate**.

## ACHIEVEMENTS

- Solved **600+ DSA Questions** in LeetCode, GeeksforGeeks and Codeforces.
- Best Leetcode Contest Rank: 1844 / 27539 with **Overall Rating: 1669**.
- Computer Science **Departmental Topper** for all four years of BTech 2016-2020.
- **Winner at India-Japan workshop 2023** organized by **Suzuki Innovation Centre** titled Urban Planning and Smart Cities using Next- Generation Wireless.
- Represented IIT Hyderabad at **ACM India Summit 2023** in IISER, Pune.
- **Presenter at SUZUKI-IITH TECH SHOW 2022** to demonstrate a 5G Vehicle-to-Everything use-case of Ambulance Alert.
- Secured **1st Position in Robowar Event** of Instruo Technical Fest of IEST, Shibpur, in 2019.
- Awarded **2nd Prize in Robotics (Autonomous)** – Line Follower in College Technical Fest 2017.

## TECHNICAL SKILLS

- Network Simulator-3 (NS3), MATLAB, Arduino, Wireshark, OpenSSL
- C, C++, HTML, CSS, Bootstrap

## EDUCATION

### M.Tech. (CSE) - 8.3 CGPA Indian Institute of Technology Hyderabad

📅 Aug 2021 - June 2024

### B.Tech. (CSE) - 9.52 CGPA College of Engineering and Management, Kolaghat

📅 Aug 2016 - Oct 2020

## LEADERSHIP ROLES

- **Placement Coordinator**, Office of Career Services (OCS), IIT Hyderabad [2023 – 2024]
- **Chair**, Association for Computing Machinery's Council on Women in Computing (**ACM-W**) [2023 – 2024]
- **Vice-Chair**, Association for Computing Machinery's Council on Women in Computing (**ACM-W IITH**) [2022 – 2023]
- **Member, Finance and Consulting Club (FCC IITH)** [2021 – 2022]

## PUBLICATIONS

1. **Unified Aerial and Terrestrial 5G NR Sidelink Multi-hop Transmission for Enhanced V2X Communication.**  
*100th Vehicular Technology Conference (VTC-Fall 2024)*, Washington DC, USA, October 7, 2024.
2. **LAMP: A Latency-Aware MAC Protocol for Joint Scheduling of CAM and DENM Traffic over 5G-NR Sidelink.**  
*Journal of Computer Communications (COMCOM)*, January 22, 2024.
3. **On Enhancing Semi-Persistent Scheduling in 5G NR V2X to Support Emergency Communication Services in Highly Congested Scenarios.**  
*International Conference on Distributed Computing and Networking (ICDCN'23)*, IIT Kharagpur, January 3, 2023.
4. **Medical Image Encryption Algorithm based on Dynamic DNA Sequencing and 2D-3D Chaotic Equations.**  
*IOP Conference Series: Materials Science and Engineering*, February 24, 2021.