

ANWESHA KAR

System Software Engineer

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📍 Bangalore, India

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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 IIEST, 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.