Anuj Sachan

Assistant Professor
School of Computer and Systems Sciences
Jawaharlal Nehru University
New Delhi, India

Mob. +91-9354388840
anujsachan@mail.jnu.ac.in
anujsachan@jnu.ac.in
LinkedIn
Google Scholar

Area of Interest

Data Structures, Algorithms, Database Management Systems, Computer Networks, Software Defined Networking, Traffic Signal Control Systems, and Social Internet of Vehicles.

Education

Ph.D. in Computer Science and Engineering 2024
Indian Institute of Technology, Roorkee *Uttrakhand, India*

M.Tech in Information Security 2019
Indian Institute of Information Technology, Gwalior *Madhya Pradesh, India*

B.Tech in Computer Science and Engineering 2015
Dr. A.P.J. Abdul Kalam Technical University, Lucknow *Uttar Pradesh, India*

Experience

Assistant Professor | Jawaharlal Nehru University, New Delhi {December 2025 - Present}

Post Doctoral Fellow | Indian Institute of Technology, Bombay {November 2024 - November 2025}

- Development of data imputation methods using data from various sensors, including UAVs (drones) and crowdsourced data (Google APIs), to improve urban traffic mobility management

Junior Research Fellow | Indian Institute of Technology, Roorkee {January 2021 - November 2022}

- Development of several techniques using software-defined networking to enhance the traffic flow at the intersection using deep learning, reinforcement learning, and mathematical modeling in actual traffic scenarios

Guest Faculty | Gautam Buddha University, Gr. Noida {July 2019 - December 2020}

- Responsible for educating students (UG & PG) at all levels and developing their personalities

Awards / Scholarships / Academic Achievements

- Received IIT Bombay Institute Postdoctoral Fellowship from 2024
- Received International Travel Support (ITS) by Anusandhan National Research Foundation (ANRF) to attend VTC2024-Fall in 2024
- Received Partial Financial Support from Dean of Resources & Alumni Affairs IIT Roorkee to attend VTC2024-Fall in 2024
- Received ACM India Research Facilitation Grant (RFG) in 2024
- Received Travel Grant to attend CCGRID 2023 at IISc Bangalore
- Received Student Travel Grant to attend CODS-COMAD 2023 at IIT Bombay
- Received IIT Roorkee Institute Research Fellowship from 2022
- Received Student Travel Grant to attend IndoML 2022 at IIT Gandhinagar
- Received Research Fellowship from Science and Engineering Research Board (SERB), Department of Science & Technology (DST), Govt. of India from 2021
- Qualified UGC NET exam in Computer Science and Applications discipline held in DEC 2017
- Qualified GATE exam in Computer Science and Information discipline held in 2016, 2017, 2019 & 2021
- Reviewer for research articles of Nature Research (Scientific Data), IEEE Transactions on Artificial Intelligence, IEEE Systems Journal, IET Intelligent Transport Systems, Intelligent Control and System Engineering, IEEE Open Journal of Vehicular Technology, 7th International Conference on Computer Applications in Electrical Engineering-Recent Advances (CERA) | IEEE Conference, IEEE International Conference on Electrical, Electronics, Communication, and Computers (ELEXCOM'23), etc.
- Technical Programme Committee member in IEEE International Conference on Electrical, Electronics, Communication and Computers (ELEXCOM'23), Member of the Program Committee (PC) for the Research Track of CODS-COMAD Dec '24

Positions of Responsibility

- **Student Coordinator** | Google and Indian Institute of Technology, Roorkee (Google Research-sponsored mentorship program) in 2023
- **Faculty Coordinator** | Ducat and Aptron Solutions Workshops On Python, Machine Learning and Data-Science at GBU Greater Noida in 2020
- **Event Organizer** | Drug Free Indian Campaign (The Art of Living) at IIITM Gwalior in 2019
- **Event Co-Ordinator** | Formula (Sports Meet) at IIITM Gwalior in 2019
- **Teacher and Member** | Student Gyan Movement (SGM), an initiative taken for educating underprivileged children in IIITM Gwalior in 2018
- **Event Co-Ordinator** | National HR Summit held at IIITM Gwalior in 2017

Recent Peer Reviewed Publications

1. Anuj Sachan, Tom V. Mathew, "A Hybrid LSTM-GAIN Framework for Spatio-temporal Traffic Data Imputation", in *105th Transportation Research Board Annual Meeting (TRB-2026)* **[CORE-A] [Current Status: Accepted]**
2. Rajdeep Kar Choudhury, Anuj Sachan, Tom V. Mathew, "Predicting Departure Volume at Coordinated Intersections during Green Phases using a Hybrid CNN-LSTM Model", in *8th Conference of Transportation Research Group of India (CTRG-2025)* **[Current Status: Accepted]**
3. Anuj Sachan, Neetesh Kumar, "SDVN enabled traffic light cooperative framework for E-SIoV mobility in a smart city scenario", in IEEE Transactions on Vehicular Technology, IEEE, 2024. **[SCI, Q1, IF: 6.8]** [DOI: 10.1109/TVT.2024.3376555]
4. Anuj Sachan, Neetesh Kumar,"SDN-enabled Quantized LQR for Smart Traffic Light Controller to Optimize Congestion", in ACM Transactions on Internet Technology, ACM, 2024. **[SCI, Q1, IF: 5.3]** [DOI: 10.1145/3641104]

Research Publications

Journals

1. Anuj Sachan, Neetesh Kumar, "SDN Control Enabled and Time-Quantum Driven Max-Pressure Approach for Intersection Management in Smart City", in IEEE Systems Journal, IEEE, 2022. **[SCI, Q1, IF: 4.4]** [DOI: 10.1109/JSYST.2022.3211933]
2. Anuj Sachan, Neetesh Kumar, "SDVN enabled traffic light cooperative framework for E-SIoV mobility in a smart city scenario", in IEEE Transactions on Vehicular Technology, IEEE, 2024. **[SCI, Q1, IF: 6.8]** [DOI: 10.1109/TVT.2024.3376555]
3. Anuj Sachan, Neetesh Kumar,"SDN-enabled Quantized LQR for Smart Traffic Light Controller to Optimize Congestion", in ACM Transactions on Internet Technology, ACM, 2024. **[SCI, Q1, IF: 5.3]** [DOI: 10.1145/3641104]
4. Anuj Sachan, and Neetesh Kumar,"S-Edge: heterogeneity-aware, light-weighted, and edge computing integrated adaptive traffic light control framework", in The Journal of Supercomputing, Springer, 2023. **[SCI Q2, IF: 3.3]** [DOI: 10.1007/s11227-023-05216-0]
5. Neetesh Kumar, Navjot Singh, Anuj Sachan, and Rashmi Chaudhry,"SIoV Mobility Management using SDVN-enabled Traffic Light Corporative Framework", in ACM Transactions on Cyber Physical Systems, ACM, 2024. **[SCI, Q1, IF: 2.3]** [DOI: 10.1145/3653721]
6. Dheeraj Jutury, Neetesh Kumar, Anuj Sachan, Yash Daultani and Naveen Dhakad, "Adaptive Neuro-Fuzzy enabled Multi-mode Traffic Light Control System for Urban Transport Network", in Applied Intelligence, Springer, [Status: Accepted, 2022] **[SCI, Q2, IF: 5.3]** [DOI: 10.1007/s10489-022-03827-3]

Conferences

1. Anuj Sachan, Tom V. Mathew, "A Hybrid LSTM-GAIN Framework for Spatio-temporal Traffic Data Imputation", in *105th Transportation Research Board Annual Meeting (TRB-2026)* **[CORE-A] [Current Status: Accepted]**
2. Rajdeep Kar Choudhury, Anuj Sachan, Tom V. Mathew, "Predicting Departure Volume at Coordinated Intersections during Green Phases using a Hybrid CNN-LSTM Model", in *8th Conference of Transportation Research Group of India (CTRG-2025)* **[Current Status: Accepted]**

3. Anuj Sachan, Nisha Singh Chauhan, and Neetesh Kumar, "Real-time Data-driven Smart Traffic Light Co-operative Framework for E-SIoV Mobility Management", in *IEEE 100th Vehicular Technology Conference (VTC2024-Fall)* **[CORE-B, Qualis-A1] (flagship conference of IEEE Vehicular Technology Society)** [DOI: 10.1109/VTC2024-Fall63153.2024.10757922]
4. Anuj Sachan, Nisha Singh Chauhan, Neetesh Kumar, "Congestion Minimization using Fog-deployed DRL-Agent Feedback enabled Traffic Light Cooperative Framework", in *IEEE/ACM 23rd International Symposium on Cluster, Cloud and Internet Computing (CCGrid), IEEE, 2023.* **[CORE-A]** [DOI: 10.1109/CCGrid57682.2023.00058]
5. Anuj Sachan, Yash Daultani, Neetesh Kumar, "S-Edge: Smart Edge Computing Framework for Real-time Heterogeneous Vehicular Network" in *15th International Conference on Knowledge and Smart Technology 2023 (KST 2023).* [DOI: 10.1109/KST57286.2023.10086800]
6. Anuj Sachan and Neetesh Kumar,"Intelligent Traffic Control System for Emergency Vehicles", in *IoT and Analytics for Sensor Networks: Proceedings of ICWSNUCA 2021.* [DOI: 10.1007/978-981-16-2919-8_14]
7. Vaibhav Garg, Anuj Sachan, Neetesh Kumar, Sarthak Mittal, "Congestion Control utilizing Software Defined Control Architecture at the Traffic Light Intersection", in *the Fourth International Workshop on Smart Living with IoT, Cloud, and Edge Computing (SLICE-2021) in conjunction with the 18th International Conference on Mobile Ad-Hoc and Smart Systems (MASS-2021)* **[CORE-B, Qualis-B1]**. [DOI: 10.1109/MASS52906.2021.00085]
8. Mohammed Swaned, Sajid Javid, Shreyali Humaney, Anuj Sachan, Nisha Singh Chauhan, and Neetesh Kumar, "Enhancing Traffic Management Through Advanced Vehicle Detection for Congestion Prevention." in *the Sixth IEEE MASS Workshop on Smart Living with IoT, Cloud, and Edge Computing 2024 in conjunction with 21th International Conference on Mobile Ad-Hoc and Smart Systems (MASS-2024)* **[CORE-B, Qualis-B1]**. [DOI: 10.1109/MASS62177.2024.00099]
9. Anuj Sachan, Neetesh Kumar and Adwiteeya, "Light Weighted Mutual Authentication and Dynamic Key Encryption for IoT Devices Applications", in *2019 International Conference on Issues and Challenges in Intelligent Computing Techniques (ICICT).* [DOI: 10.1109/ICICT46931.2019.8977672]
10. Anshu Singh, and Anuj Sachan, "Student clickstreams activity based performance of online course", in *Artificial Intelligence and Sustainable Computing for Smart City: First International Conference, AIS2C2 2021.* [DOI: 10.1007/978-3-030-82322-1_18]

Work Under Progress

- Anuj Sachan, Ashok Arora, Neetesh Kumar, and Kshirasagar Naik, "SDVN enabled Traffic Light Cooperative Framework for CAV Mobility Movement." *(IEEE Transactions on on Vehicular Technology)* **[Current Status: Under Review][SCI, Q1, IF: 7.1]**

Extra Curricular skills

- Man of the Tournament in Inter College Cricket Tournament at IIITM Gwalior in 2018
- Participated in Cultural events at the Graduation level, Organized technical events at the Graduation level, Participated in outdoor games at the school level, and many others

References

- **Prof. Neetesh Kumar (Ph.D. Supervisor)** Associate Professor in the Department of Computer Science & Engineering, IIT Roorkee, Uttrakhand, India-247667, Off. Phone: +91-1332-284977, Mob: +91-9015695894, Email: neetesh@cs.iitr.ac.in.
- **Prof. Tom V. Mathew (Post-Doctoral Supervisor)** Professor in the Department of Civil Engineering, IIT Bombay, Mumbai, India-400076, Off. Phone: +91-2225-767349, Mob: +91-9819959439, Email: tvm@civil.iitb.ac.in.
- **Prof. Pradumn K. Pandey (Member SRC)** Associate Professor in the Department of Computer Science & Engineering, IIT Roorkee, Uttrakhand, India-247667, Off. Phone: +91-1332-285352, Mob: +91-7409889713, Email: pradumn.pandey@cs.iitr.ac.in.
- **Prof. Yash Daultani (Research Collaborator)** Associate Professor of the Operations Management Group, IIM Lucknow, Uttar Pradesh, India-226013, Off. Phone: +91-522-6696614, Mob: +91-9005672715, Email: yash.daultani @iiml.ac.in.