

Gourav Prateek SHARMA

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RESEARCH INTERESTS

Time-sensitive Networking (TSN) and Deterministic Networking (DetNet) and their integration with wireless technologies (e.g., WiFi and 5G URLLC).

EXPERIENCE

National Institute of Technology Kurukshetra <i>Assistant Professor, Dept. of ECE</i>	<i>July 2025 - Present</i>
Thapar Institute of Engineering and Technology <i>Assistant Professor, Dept. of ECE</i>	<i>Dec 2024 - June 2025</i>
KTH Royal Institute of Technology, Sweden <i>Postdoctoral Researcher, School of EECS</i>	<i>Oct 2022 - Nov 2024</i>

EDUCATION









IDLab, Ghent University - imec <i>Doctorate in Computer Science Engineering</i> Thesis: Optimization Algorithms for Virtual Network and Media Services	<i>Oct 2017 - June 2022</i>
Indian Institute of Technology Delhi <i>Master in Technology</i> Optoelectronics and Optical Communication Thesis: Optical Frequency Shifters based on Stimulated Brillouin Scattering	<i>July 2015 - May 2017</i> GPA: 9.588/10
National Institute of Technology Srinagar <i>Bachelor in Electronics and Communication Engineering</i>	<i>2011 - June 2015</i> GPA: 8.33/10

JOURNAL PUBLICATIONS

- S. Egger, F. Dürr, B. Varga, MD Andrade, **GP Sharma**, J. Sachs, J. Harmatos, J. Gross, "Wireless-Aware TSN Engineering: Implications for 5G and Upcoming 6G Networks," *IEEE Network*, 2025. 📄
- G.P. Sharma** et al., "End-to-end Scheduling for Wired-wireless Mixed Networks," *Journal of Network and Systems Management*, 2024. 📄
- G.P. Sharma** et al., "Towards Deterministic Communications in 6G Networks: State of the Art, Open Challenges and the Way Forward," *IEEE Access*, 2023. 📄
- G.P. Sharma**, W. Tavernier, D. Colle, and M. Pickavet, "Routing and Scheduling for 1+1 Protected DetNet flows," *Computer Networks*, 2022. 📄
- G.P. Sharma**, W. Tavernier, D. Colle, and M. Pickavet, "Scheduling for Media Function Virtualization," *Future Internet*, vol. 13, no. 7, 2021. 📄
- G.P. Sharma**, D. Colle, W. Tavernier, and M. Pickavet, "On Decomposition and Deployment of Virtualized Media Services," *IEEE Transactions on Broadcasting*, vol. 67, no. 3, pp. 761–775, 2021. 📄
- G.P. Sharma**, W. Tavernier, D. Colle, and M. Pickavet, "VNF-AAPC: Accelerator-aware VNF Placement and Chaining," *Computer Networks*, vol. 177, 2020. 📄
- G.P. Sharma**, S. Preußler and T. Schneider, "Precise Optical Frequency Shifting Using Stimulated Brillouin Scattering in Optical Fibers," *IEEE Photonics Technology Letters*, vol. 29, no. 17, pp. 1467-1470, 1 Sept.1, 2017. 📄

CONFERENCE PUBLICATIONS

- N. Roy, M.H. Dhullipalla, **G.P. Sharma**, D. Dimarogonas and J. Gross, "Quality of Control based Resource Dimensioning for Collaborative Edge Robotics," Accepted at IEEE CCNC Workshops 2025 - ROBOCOM. 📄
- S. Mostafavi, M. Tillner, **G.P. Sharma**, and J. Gross, "EDAF: An End-to-End Delay Analytics Framework for 5G-and-Beyond Networks," Accepted at IEEE INFOCOM Workshops 2024 - CNERT. 📄

3. S. Mostafavi, V. Moothedath, S. Rönngren, N. Roy, **G.P. Sharma**, S. Seo, M.O. Muñoz and J. Gross, “ExPECA: An Experimental Platform for Trustworthy Edge Computing,” *ACM TEC*, 2023. 
4. S. Mostafavi, **G.P. Sharma**, and J. Gross, “Data-Driven Latency Probability Prediction for Wireless Networks: Focusing on Tail Probabilities,” *IEEE Globecom 2023*, Kuala Lumpur, Malaysia, 2023. 
5. J. Miserez, **G.P. Sharma** and W. Tavernier, “Routing protocols exploiting queue information for deterministic networks,” *International Conference on the Design of Reliable computer networks (DRCN)*, Vilanova, Spain, 2023. 
6. **G.P. Sharma**, D. Colle, W. Tavernier, and M. Pickavet, “Improving resource utilization with Virtual Media Function decomposition,” *International Conference on Multimedia Computing, Networking and Applications (MCNA)*, Valencia, Spain (virtual), 2020, pp. 31–37. 
7. **G.P. Sharma**, W. Tavernier, D. Colle, and M. Pickavet, “Hardware-accelerator aware VNF-chain recovery,” *International Conference on the Design of Reliable computer networks (DRCN)*, Milan, Italy (virtual), 2020. 
8. **G.P. Sharma**, D. Colle, W. Tavernier, and M. Pickavet, “VNF-AAP: Accelerator-aware Virtual Network Function Placement,” *IEEE Conference on Network Function Virtualization and Software Defined Networks (NFV-SDN)*, Dallas, USA, 2019. 
9. **G.P. Sharma**, W. Tavernier, D. Colle, and M. Pickavet, “Dynamic hardware-acceleration of VNFs in NFV environments,” *International Conference on Software Defined Systems (SDS)*, Rome, Italy, 2019, pp. 254–259. 
10. **G.P. Sharma**, W. Tavernier, D. Colle, and M. Pickavet, “Dynamic accelerator provisioning for SSH tunnels in NFV environments,” *IEEE Conference On Network Softwarization (Netsoft)*, Paris, France, 2019, pp. 242–244. 

SELECTED RESEARCH PROJECTS

- **DETERMINISTIC6G (EU’s Horizon2020, 2022 - 2025)** – Investigating data-driven methods to characterize RAN latency for time-critical applications. Lead contributor on RAN performance modeling.
- **Safe smart construction (Digital’s Future, 2024-2025)** - 5G resource dimensioning for collaborative edge robotics
- **VERI-END (FWO, 2019–2022)** – Developed end-to-end scheduling framework for mixed wired–wireless TSN network.
- **NGPaaS (EU’s Horizon2020, 2017–2019)** – Contributed to NFV platform design; delivered invited talk at the TSDSI India–EU 5G workshop.

ACHIEVEMENTS

- Recipient of the student travel grant to present a paper at the **IEEE NFV-SDN 2019** conference in Dallas, USA.
- Recipient of the **DAAD’s IIT Master Sandwich Scholarship 2016**.
- Participation (at the national level) in the 18th **National Science Congress 2010**, Chennai, to present a school project on rural water purification system.

PROFESSIONAL SERVICES

Journal Reviewer	Computer Networks, Computer Communications, IEEE Communications Letters, IEEE Access, IEEE TNSM
Conference Reviewer	IEEE ICCCN, IEEE DRCN, IEEE Globecom, IEEE NetSoft

SKILLS AND COMPETENCIES

Programming languages	C, Python, MATLAB, Verilog
Tools	Git/Github, CPLEX, LabView

LANGUAGES

Hindi, English, German (A1)