

# Gourav Prateek SHARMA

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## RESEARCH INTERESTS

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Telecom and media networks, Resource allocation and Packet scheduling

## EXPERIENCE

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**ISE, EECS, Royal Institute of Technology (KTH)**

*Oct 2022 - Present*

*Postdoctoral Researcher*

## EDUCATION

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**IDLab, Ghent University - imec**

*Oct 2017 - June 2022*

*Doctorate in Computer Science Engineering*

**Thesis:** Optimization Algorithms for Virtual Network and Media Services

**Indian Institute of Technology Delhi**

*July 2015 - May 2017*

*Master in Technology*

Optoelectronics and Optical Communication

**Thesis:** Optical Frequency Shifters based on Stimulated Brillouin Scattering

**GPA:** 9.588/10

**National Institute of Technology Srinagar**








*2011 - June 2015*

*Bachelor in Electronics and Communication Engineering*

**GPA:** 8.33/10



## JOURNAL PUBLICATIONS





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1. **G.P. Sharma** et al., “Towards Deterministic Communications in 6G Networks: State of the Art, Open Challenges and the Way Forward,” Under review in *IEEE Access*. 
2. **G.P. Sharma** et al., “End-to-end Scheduling for Wired-wireless Mixed Networks,” Under review in *IEEE Transactions on Network and Service Management*, 2023. 
3. **G.P. Sharma**, W. Tavernier, D. Colle, and M. Pickavet, “Routing and Scheduling for 1+1 Protected DetNet flows,” Published in *Computer Networks*, 2022. 
4. **G.P. Sharma**, W. Tavernier, D. Colle, and M. Pickavet, “Scheduling for Media Function Virtualization,” Published in *Future Internet*, vol. 13, no. 7, 2021. 
5. **G.P. Sharma**, D. Colle, W. Tavernier, and M. Pickavet, “On Decomposition and Deployment of Virtualized Media Services,” Published in the *IEEE Transactions on Broadcasting*, vol. 67, no. 3, pp. 761–775, 2021. 
6. **G.P. Sharma**, W. Tavernier, D. Colle, and M. Pickavet, “VNF-AAPC: Accelerator-aware VNF Placement and Chaining,” Published in *Computer Networks*, vol. 177, 2020. 
7. **G.P. Sharma**, S. Preußler and T. Schneider, “Precise Optical Frequency Shifting Using Stimulated Brillouin Scattering in Optical Fibers,” Published in the *IEEE Photonics Technology Letters*, vol. 29, no. 17, pp. 1467-1470, 1 Sept.1, 2017. 

## CONFERENCE PUBLICATIONS

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1. S. Mostafavi, **G.P. Sharma** and J. Gross, “Data-Driven Latency Probability Prediction for Wireless Networks: Focusing on Tail Probabilities,” Submitted to *IEEE Globecom*, 2023.
2. J. Miserez, **G.P. Sharma** and W. Tavernier, “Routing protocols exploiting queue information for deterministic networks,” Published in the Proceedings of the *International Conference on the Design of Reliable computer networks (DRCN)*, Vilanova, Spain, 2023. 
3. **G.P. Sharma**, D. Colle, W. Tavernier, and M. Pickavet, “Improving resource utilization with Virtual Media Function decomposition,” Published in the Proceedings of the *International Conference on Multimedia Computing, Networking and Applications (MCNA)*, Valencia, Spain (virtual), 2020, pp. 31–37. 

4. **G.P. Sharma**, W. Tavernier, D. Colle, and M. Pickavet, “Hardware-accelerator aware VNF-chain recovery,” Published in the Proceedings of the *International Conference on the Design of Reliable computer networks (DRCN)*, Milan, Italy (virtual), 2020. 
5. **G.P. Sharma**, D. Colle, W. Tavernier, and M. Pickavet, “VNF-AAP: Accelerator-aware Virtual Network Function Placement,” Published in the Proceedings of the *IEEE Conference on Network Function Virtualization and Software Defined Networks (NFV-SDN)*, Dallas, USA, 2019. 
6. **G.P. Sharma**, W. Tavernier, D. Colle, and M. Pickavet, “Dynamic hardware-acceleration of VNFs in NFV environments,” Published in the Proceedings of the *International Conference on Software Defined Systems (SDS)*, Rome, Italy, 2019, pp. 254–259. 
7. **G.P. Sharma**, W. Tavernier, D. Colle, and M. Pickavet, “Dynamic accelerator provisioning for SSH tunnels in NFV environments,” Published in the Proceedings of the *IEEE Conference On Network Softwarization (Netsoft)*, Paris, France, 2019, pp. 242–244. 

## PROJECTS

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- Contributing to the Horizon 2020 EU-funded project **DETERMINISTIC6G** (2023-). Among other tasks, the key responsibility is to investigate data-driven methods to accurately characterize RAN latency to support mission-critical applications.
- Worked on the problem of end-to-end scheduling for mixed wired-wireless TSN in the context of the FWO project **VERI-END** (2019-2022). The **optimization problem** for end-to-end packet scheduling was modeled as an ILP in the CPLEX environment and a greedy-based heuristic was proposed.
- Contributed to various tasks in the Horizon 2020 EU-funded project **NGPaaS** (2017-2019) led by NOKIA-BL Paris. On behalf of NGPaaS, gave a talk at India EU Stakeholders’ workshop on 5G Technology Landscape regarding the NGPaaS platform (Feb. 2019).
- Developed a scheme for dynamic provisioning of FPGA-based accelerator resources for VNFs in NFV environments.
- Worked on “**Optical Frequency Shifters based on Stimulated Brillouin Scattering**” (Aug 2016 - May 2017) as a part of my M.Tech thesis at IIT Delhi and TU Braunschweig. The objective was to selectively amplify one of the sidebands of optical DSB-SC signal using stimulated Brillouin scattering.

## ACHIEVEMENTS

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- 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**
- Technical Manager of “**EMBESYS**”, an event organized under technical festival at NIT Srinagar in 2014
- Selected in the 18th **National Science Congress 2010** (National level), Chennai to present a project on rural water purification system

## SKILLS AND COMPETENCIES

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

## LANGUAGES

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Hindi, English, German (A1)

## PROFESSIONAL SERVICES

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<b>Journals Reviews</b>	Computer Communications, IEEE Communication Letters, IEEE Access
<b>Conferences Reviews</b>	IEEE DRCN, IEEE Globecom, IEEE Netsoft

## INTERESTS

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Badminton, Yoga, Cricket, Mindfulness

## ONLINE COURSES AND MOOCS

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- **Algorithms Specialization** offered by Coursera and Stanford University (April 2022)
- **Essentials of IP Media Transport for Broadcasters** offered by the SMPTE (February 2020)
- **Understanding SMPTE ST 2110** offered by the SMPTE (February 2020)
- **“Embedded Systems – Shape the World”** (May 2014) offered by edX and the University of Texas Austin (Achieved 100%)
- **Computer Networks** (April 2014) by Coursera and the University of Washington.

## REFERENCES

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Available on request.