

Gourav Prateek SHARMA

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RESEARCH INTERESTS

Telecom and media networks, Resource allocation and Packet scheduling

EXPERIENCE

ISE, EECS, Royal Institute of Technology (KTH)

Oct 2022 - Present

Postdoctoral Researcher

EDUCATION

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

GPA: 9.588/10

Optoelectronics and Optical Communication

Thesis: Optical Frequency Shifters based on Stimulated Brillouin Scattering

National Institute of Technology Srinagar

2011 - June 2015

Bachelor in Electronics and Communication Engineering





GPA: 8.33/10

JOURNAL PUBLICATIONS

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

1. S. Mostafavi, **G.P. Sharma** and J. Gross, “Data-Driven Latency Probability Prediction for Wireless Networks: Focusing on Tail Probabilities,” Accepted in *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

- 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

- 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

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

LANGUAGES

Hindi, English, German (A1)

PROFESSIONAL SERVICES

Journals Reviews	Computer Communications, IEEE Communication Letters, IEEE Access
Conferences Reviews	IEEE DRCN, IEEE Globecom, IEEE Netsoft

INTERESTS

Badminton, Yoga, Cricket, Mindfulness

ONLINE COURSES AND MOOCS

- **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

Available on request.