

Subhadeep Sahoo

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Education

🎓 **Ph.D.**, Computer Science

University of California, Davis

GPA: 3.96/4

Advisors: Professor Biswanath Mukherjee and Professor Massimo Tornatore

Davis, CA, USA

2021 – Present

🎓 **M.Eng. by research**, Communication and Information Systems

Chongqing University of Posts and Telecommunications

GPA: 3.96/4

Advisor: Professor Ning-Hai Bao

Chongqing, China

2017 – 2020

🎓 **B.Tech.**, Electronics and Communication Engineering

Maulana Abul Kalam Azad University of Technology

(Formerly known as West Bengal University of Technology)

GPA: 9.12/10

Kolkata, India

2011 – 2015

Work Experience

Nokia Bell Labs, Research Intern

- **Project responsibilities:** Towards next-generation network and cloud service provision: third-party brokerage through blockchain marketplace.
- **Technical skill sets:** Dynamic service durations, privacy through smart contracts, Deterministic performance, SLA metric generation, monitoring, violation alerts, and full contract lifecycle tracking.

Murray Hill, NJ, USA

Summer, 2025

Nokia Bell Labs, Research Intern

- **Project responsibilities:** Software-defined guaranteed-latency networking with Qdisc and shaper.
- **Technical skill sets:** Linux based module designing and analyzing performance on testbed.

Murray Hill, NJ, USA

Summer, 2023

Nokia Bell Labs, Research Intern

- **Project responsibilities:** Edge datacenter latency minimization over dynamic deterministic optical network.
- **Technical skill sets:** Python based simulation designing and analyzing performance on testbed.

Paris, France

Spring, 2020

Tata Consultancy Services Ltd., System Engineer

- **Project responsibilities:** Network configuration review and security analysis.
- **Technical skill sets:** Network penetration testing, OWASP, Iperf, Vulnerability assessment.

Kolkata, India

2015 - 2017

Selected Professional Services

☐ Member of the technical program committee for IEEE ANTS, 2023 and 2024.

Virtual, 2023 - 2024

☐ Reviewer for IEEE TNSM, IEEE Access, IEEE IoT journal, IEEE ICC, IEEE DRCN, IEEE ANTS, 6GNet, and NoF coference.

Virtual, 2020 - Present

Teaching

- ❑ TA for ECS 154A Computer Architecture [↗](#) taught by Prof. Daryl Posnett at UC Davis. Spring, 2022
- ❑ TA for ECS 152A Computer Networks [↗](#) taught by Prof. Dipak Ghosal at UC Davis. Spring, 2021
- ❑ TA for Communication Networking Theory taught by Prof. Ning-Hai Bao at CQUPT. Fall, 2018

Research Projects

US-Japan JUNO3: Cloud-Carrier Cooperation for Efficient and Ultra-Reliable Programmable Backbone Networks

- Developed novel cooperation strategies among DC service provider and optical-network carriers during disaster recovery to improve service restoration with reduced cost and time.
- **Tools Used:** Python, Bash, Cplex

Natural Science Foundation, China: Survivable Virtual Network Embedding Scheme in Elastic Optical Networks

- Developed novel strategies to maximize acceptance of virtual network (VN) requests, utilization of spectrum on Elastic Optical Networks, and guarantee the survivability.
- **Tools Used:** Python, C++, Bash

Selected Publications

1. **S. Sahoo**, S. Xu, S. Ferdousi, Y. Hirota, M. Tornatore, Y. Awaji, and B. Mukherjee, “**Post-Disaster Cloud-Service Restoration through Datacenter-Carrier Cooperation**”. [IEEE/OSA JOCN ↗](#), 2025
2. S. Xu, **S. Sahoo**, S. Ferdousi, M. Shiraiwa, Y. Hirota, M. Tornatore, Y. Awaji, and B. Mukherjee, “**Multi-Entity Cooperation Platform Facilitating Network-Cloud Recovery**”. [IEEE/OSA JOCN ↗](#), 2025
3. I. M. Castrignano, **S. Sahoo**, S. Xu, S. Ferdousi, Y. Hirota, M. Tornatore, Y. Awaji, and B. Mukherjee, “**A Centralized Cooperation Model among Datacenter Providers and Carriers for Disaster Recovery**”. *(*Best paper award*) [IEEE ANTS ↗](#), 2025
4. **S. Sahoo**, S. Xu, S. Ferdousi, Y. Hirota, M. Tornatore, Y. Awaji, and B. Mukherjee, “**Service Restoration in Multi-Entity Network-Cloud Ecosystems: How to Cooperate?**”. [IEEE Commag ↗](#), 2024
5. **S. Sahoo**, S. Ferdousi, S. Xu, Y. Hirota, M. Tornatore, Y. Awaji, and B. Mukherjee, “**DC-Carrier Cooperation for Rapid Restoration against PNE-Node Failure in Optical Networks**”. [IEEE/OSA OFC ↗](#), 2024
6. S. Xu, **S. Sahoo**, S. Ferdousi, N. Yoshikane, M. Shiraiwa, Y. Hirota, M. Tornatore, T. Tsuritani, Y. Awaji, and B. Mukherjee, “**Scheme of carrier cooperation with coordinated scheduling for faster and lower-cost failure/disaster recovery**”. [IEEE/OSA JOCN ↗](#), 2024
7. S. Xu, **S. Sahoo**, S. Ferdousi, M. Shiraiwa, Y. Hirota, M. Tornatore, Y. Awaji, and B. Mukherjee, “**A Novel Strategy of Carrier Cooperation with Coordinated Scheduling for Swift Failure/Disaster Recovery**”. *(*Best paper award*) [IEEE ONDM ↗](#), 2023
8. **S. Sahoo**, S. Xu, S. Ferdousi, Y. Hirota, M. Tornatore, Y. Awaji, and B. Mukherjee, “**Strategic Cooperation among Datacenter Providers and Optical-Network Carriers for Disaster Recovery**”. [IEEE Globecom ↗](#), 2022
9. **S. Sahoo**, S. Xu, S. Ferdousi, Y. Hirota, M. Tornatore, Y. Awaji, and B. Mukherjee, “**Datacenter-Carrier Cooperation over Optical Networks during Disaster Recovery**”. [IEEE/OSA OFC ↗](#), 2022
10. **S. Sahoo**, S. Bigo, and N. Benzaoui, “**Introducing Best-in-Class Service Level Agreement for Time-Sensitive Edge Computing**”. [IEEE/OSA ECOC ↗](#), 2021
11. N. Benzaoui, **S. Sahoo**, and S. Bigo, “**Deterministic latency networks: the enabler of edge data center synchronous operation**”. [IEEE/OSA JOCN ↗](#), 2021
12. **S. Sahoo**, S. Bigo, and N. Benzaoui, “**Deterministic Dynamic Network-Based Just-**

in-Time Delivery for Distributed Edge Computing”.

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| 13. N. H. Bao, S. Sahoo , M. Kuang, and Z. Z. Zhang, “ Adaptive Path Splitting Based Survivable Virtual Network Embedding in Elastic Optical Networks ”. | Elsevier OFT 🔗 , 2020 |
| 14. N. H. Bao, S. Sahoo , M. Kuang, and Z. Z. Zhang, “ Synchronous Evacuation Strategy for Double Virtual Machines Under Disaster Risk Zone ”. | IEEE TSP 🔗 , 2020 |
| 15. N. H. Bao, M. Kuang, S. Sahoo , G. P. Li, and Z. Z. Zhang, “ Early Warning Time based Virtual Network Evacuation Against Disaster Threats ”. | IEEE IoT Journal 🔗 , 2019 |

Patent

☞ An Anchor Node-Based Virtual Network Survivability Mapping in Elastic Optical Networks, ZL201910079410.2.

[Link](#) [🔗](#), 2021

Selected Honors and Awards

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| 🏆 Best Paper Award, IEEE ONDM. | 2023 |
| 🏆 Summer Research Fellowship Award, CS department, UC Davis. | 2022 |
| 🏆 Graduate Studies- Fall Travel Awards for IEEE Globecom, UC Davis. | 2022 |
| 🏆 Graduate Student Research Fellowship, UC Davis. | 2020 - Present |
| 🏆 Outstanding International Student Award, International College of CQUPT, China. | 2020 |
| 🏆 Ericsson Innovation Award in North-East Asia Region. | 2019 |
| 🏆 Best Article Award on “Building a community with shared future,” CQUPT. | 2019 |
| 🏆 Chinese Government Scholarship. | 2017 - 2020 |
| 🏆 Student of the Year for outstanding achievement in undergraduate study. | 2015 |
| 🏆 Newspaper coverage for the project- communication system for mute people. | 2014 |
| 🏆 Secured 2 nd position in national embedded systems design competition at IIT, KGP. | 2013 |

Technical Skills

- 💻 **Programming Languages:** Python, Numpy, Pandas, C/C++, Embedded C, SQL, and Matlab.
- 💻 **Systems and Tools:** Linux, Arduino, Nessus, Kali Linux, Iperf, and Metasploit.
- 💻 **Writing:** Latex, Word, and various visualization tools.
- 🌐 **Languages:** English, Hindi, and Bengali.

References

Available upon request.