Subhadeep Sahoo

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Education

Ph.D., Computer Science — Davis, CA, USA
University of California, Davis — 2021 – Present
GPA: 3.96/4
Advisors: Professor Biswanath Mukherjee and Professor Massimo Tornatore

M.Eng. by research, Communication and Information Systems — Chongqing, China
Chongqing University of Posts and Telecommunications — 2017 – 2020
GPA: 3.96/4
Advisor: Professor Ning-Hai Bao

B.Tech., Electronics and Communication Engineering — Kolkata, India
Maulana Abul Kalam Azad University of Technology — 2011 – 2015
(Formerly known as West Bengal University of Technology)
GPA: 9.12/10

Work Experience

Nokia Bell Labs, Research Intern — Murray Hill, NJ, USA, Summer, 2025
- **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..

Nokia Bell Labs, Research Intern — Murray Hill, NJ, USA, Summer, 2023
- **Project responsibilities**: Software-defined guaranteed-latency networking with Qdisc and shaper.
- **Technical skill sets**: Linux based module designing and analyzing performance on testbed.

Nokia Bell Labs, Research Intern — Paris, France, Spring, 2020
- **Project responsibilities**: Edge datacenter latency minimization over dynamic deterministic optical network.
- **Technical skill sets**: Python based simulation designing and analyzing performance on testbed.

Tata Consultancy Services Ltd., System Engineer — Kolkata, India, 2015 - 2017
- **Project responsibilities**: Network configuration review and security analysis.
- **Technical skill sets**: Network penetration testing, OWASP, Iperf, Vulnerability assessment.

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. **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
4. **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
5. 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
6. 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
7. **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
8. **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
9. **S. Sahoo**, S. Bigo, and N. Benzaoui,"**Introducing Best-in-Class Service Level Agreement for Time-Sensitive Edge Computing**". IEEE/OSA ECOC, 2021
10. N. Benzaoui, **S. Sahoo**, and S. Bigo,"**Deterministic latency networks: the enabler of edge data center synchronous operation**". IEEE/OSA JOCN, 2021
11. **S. Sahoo**, S. Bigo, and N. Benzaoui,"**Deterministic Dynamic Network-Based Just-in-Time Delivery for Distributed Edge Computing**". IEEE/OSA ECOC, 2020
12. 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

13. 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

14. 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

Selected Honors and Awards

- 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 2nd position in national embedded systems design competition at IIT, KGP. 2013

Technical Skills

- **Programming Languages:** Python, Numpy, Pandas, C/C++, Embeded 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.