Sanjit Kumar Roy

Personal Data

Current Position:	Assistant Professor, Department of Computer Science and Engineering, SRM AP University, Andhra Pradesh, India.
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Education

- **Ph.D.:** Department of Computer Science & Engineering, IIT Guwahati, India.   Sep. 2022
  Thesis Title: Task and Message Co-scheduling Strategies in Real-time Cyber-Physical Systems.
  Supervisor: Prof. Arnab Sarkar.

- **M.Tech:** Department of Information Technology, NIT Durgapur, India.   Jun. 2013
  Thesis Title: Application of Distributed Key Generation in Secured Sealed-Bid Auction Mechanism.
  Supervisor: Prof. Jaydeep Howlader.

- **B.Tech:** Department of Information Technology, Asansol Engineering College, MAKAUT (Formerly known as WBUT), India.   Aug. 2008

Research Interest

Real-time Systems, Cyber-Physical Systems, Embedded Systems, Scheduling.

Publications

Journal Papers

1. **Sanjit Kumar Roy**, Rajesh Devaraj and Arnab Sarkar. "SAFLA: Scheduling Multiple Real-time Periodic Task Graphs on Heterogeneous Systems." *IEEE Transactions on Computers (IEEE TC)*, 2022.

2. **Sanjit Kumar Roy**, Rajesh Devaraj, Arnab Sarkar and Debabrata Senapati. "SLAQA: Quality-level Aware Scheduling of Task Graphs on Heterogeneous Distributed Systems." *ACM Transactions on Embedded Computing Systems (ACM TECS)*, Volume 20, Pages 1-31, 2021.

3. **Sanjit Kumar Roy**, Rajesh Devaraj and Arnab Sarkar. "Contention Cognizant Scheduling of Task Graphs on Shared Bus based Heterogeneous Platforms." *IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems (IEEE TCAD)*, Volume 41, Pages 281-293, 2021.

4. **Sanjit Kumar Roy**, Rajesh Devaraj, Arnab Sarkar, Sayani Sinha and Kankana Maji. "Contention-aware optimal scheduling of real-time precedence-constrained task graphs on heterogeneous distributed systems." *Elsevier Journal of Systems Architecture (JSA)*, Volume 105, 2020.

Conference Papers

1. **Sanjit Kumar Roy**, Arnab Sarkar and Rahul Gangopadhyay. "Processor and Bus Co-scheduling Strategies for Real-time Tasks with Multiple Service-levels." *IEEE 27th International Conference on Embedded and Real-Time Computing Systems and Applications (RTCSA)*, Pages 21-30, 2021.

2. **Sanjit Kumar Roy**, Rajesh Devaraj, Arnab Sarkar, Sayani Sinha and Kankana Maji. "Optimal scheduling of precedence-constrained task graphs on heterogeneous distributed systems with shared buses." *IEEE 22nd International Symposium on Real-Time Distributed Computing (ISORC)*, Pages 185-192, 2019.

3. **Sanjit Kumar Roy**, Rajesh Devaraj and Arnab Sarkar. "Optimal scheduling of PTGs with multiple service levels on heterogeneous distributed systems." *American Control Conference (ACC)*, Pages 157-162, 2019.

4. Jaydeep Howlader, **Sanjit Kumar Roy**, Ashis Kumar Mal. "Practical Receipt-Free Sealed-Bid Auction in the Coercive Environment". *16th International Conference on Information Security and Cryptology (ICISC)*, Pages 418-434, 2013.

Teaching Interest

Data Structures, Algorithms, Digital Design, Operating Systems, Computer Organization & Architecture.

Teaching Experience

- Subject taught at SRM AP University, Andhra Pradesh, India   Feb. 2022 - till now
  - Data Structures (CSE107), Design and Analysis of Algorithms (CSE201).
  - Data Structures Lab (CSE107L), Design and Analysis of Algorithms Lab (CSE201L).
- Teaching Asst. at Dept. of Computer Science & Engineering, IIT Guwahati, India   Jul. 2013 - Nov. 2018
  - Operating Systems Lab (CS342), CAD for VLSI (CS526), Data Structure Laboratory (CS210), Compilers Lab (CS347), Data Structures Lab (CS513), Computer Systems (CS548), Programming Languages Lab (CS431), Computing Lab (CS110), System Software Lab (CS241).
- Teaching Asst. at Dept. of Information Technology, NIT Durgapur, India   Aug. 2011 - May 2013
  - Operating System Lab, Microprocessor Lab.
- Teaching Asst. of the NPTEL Online Certification course, "Optimization Techniques for Digital VLSI Design", funded by the MHRD, Govt. of India, organized at IIT Guwahati, India, Feb-Mar 2018.
- Teaching Asst. of the NPTEL Online Certification course, "Embedded Systems-Design Verification And Test", funded by the MHRD, Govt. of India, organized at IIT Guwahati, India, Jul-Oct 2018.

Language/Tool Skills

C, Python, Matlab, Java, Shell Script, CPLEX.

Conference Presentation

- ISORC 2019, Valencia, Spain (May, 2019)
- RTCSA 2021, Virtual Conference (August, 2021)

Scholarships & Awards

- Received Scholarship from MoE (MHRD), Govt. of India to pursue Ph.D. at IIT Guwahati   Jul. 2013
- Received Scholarship from MoE (MHRD), Govt. of India to pursue M.Tech at NIT Durgapur   Aug. 2011

Professional Activities

- Reviewer
  - Journals: Complex & Intelligent Systems (Springer CAIS).
  - Conferences: COMSNETS 2022, Indicon 2021, VDAT 2016.
- Volunteer in FSTTCS, Dec. 2013, IIT Guwahati, India.
- Volunteer and active participant in GIAN course, "Mixed-Criticality Real-Time Systems", funded by the MoE (MHRD), Govt. of India, organized at IIT Guwahati, May 2018.

Referees

- **Dr. Arnab Sarkar**
  Professor, Advanced Technology Development Centre, IIT Kharagpur,
  Kharagpur - 721302, West Bengal, India
  Phone: +91-3222-2-81954 (Off), +91-3222-2-81955 (Res)
  Email: arnabsarkar@atdc.iitkgp.ac.in
  Website: http://www.facweb.iitkgp.ac.in/~arnab/

- **Dr. Chandan Karfa**
  Professor, Dept. of Computer Science & Engineering, IIT Guwahati,
  Guwahati - 781039, Assam, India
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  Website: https://www.iitg.ac.in/cse/internet-pages/ckarfa

- **Dr. Santosh Biswas**
  Professor, Dept. of Electrical Engineering and Computer Science, IIT Bhilai,
  Raipur - 492015, Chhattisgarh, India
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