RAMESH ADHIKARI

Ph.D. Candidate, School of Computer and Cyber Sciences
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EDUCATION

Ph.D. in Computer and Cyber Sciences (Expected 07/2026)
Augusta University, Augusta, GA, USA
Advisor: **Dr. Konstantin (Costas) Busch**
Supported by NSF Grant #2131538

M.E. in Computer Engineering (GPA: 3.75/4.0)
Pokhara University, Kathmandu, Nepal, 2018 – 2021

B.E. in Computer Engineering (78.15%)
Tribhuvan University, Kathmandu, Nepal, 2013 – 2017

RESEARCH INTERESTS

Distributed and Parallel Algorithms; Blockchain and Distributed Ledgers; Fault-Tolerant Distributed Systems; Transaction Scheduling; Stability Analysis; Fog–Cloud Computing; Cybersecurity.

PROFESSIONAL APPOINTMENTS & EMPLOYMENT

Graduate Research Assistant, Augusta University, USA, 08/2022 – Present

Instructor, Zenlab, Kathmandu, Nepal, 01/2021 – 12/2021

Software Engineer, Sanima Bank, Kathmandu, Nepal 05/2019 – 06/2022

Software Engineer, SmartMobe Solutions Pvt. Ltd, Kathmandu, Nepal 02/2018 – 04/2019

PUBLICATIONS

Conference Proceedings (Peer Reviewed)

1 **Ramesh Adhikari**, Costas Busch, and Miroslav Popovic, "*On the Efficiency of Dynamic Transaction Scheduling in Blockchain Sharding*," Proceedings of the 39th International Symposium on DistributedComputing **(DISC 2025)**, pp 2:1–2:23, Dagstuhl, Germany.

2 **Ramesh Adhikari**, Costas Busch, and Dariusz R. Kowalski, "*Stable Blockchain Sharding under Adversarial Transaction Generation*," Proceedings of the 36th ACM Symposium on Parallelism in Algorithms and Architectures **(SPAA 2024)**, pp. 451-461, Nantes, France.

3 **Ramesh Adhikari**, Costas Busch, and Pavan Poudel, "*A Poly-Log Approximation for Transaction Scheduling in Fog–Cloud and Beyond*," Proceedings of the 27th International Symposium on Stabilization, Safety, and Security of Distributed Systems **(SSS 2025)**, pp 21– 39, Kathmandu, Nepal, **[Best Student Paper Award]**

4 **Ramesh Adhikari**, Costas Busch, and Dariusz R. Kowalski, "*Near-Optimal Stable Transaction Processing in Blockchain Sharding*," Proceedings of the 27th International Symposium on Stabilization, Safety, and Security of Distributed Systems **(SSS 2025)**, pp 4–20, Kathmandu, Nepal.

5 **Ramesh Adhikari** and Costas Busch, "*Lockless Blockchain Sharding with Multiversion Control*," Proceedings of the 30th International Colloquium on Structural Information and Communication Complexity **(SIROCCO 2023)**, pp. 112 – 131, Alcala De Henares, Spain.

Journal Articles (Published, Peer Reviewed)

6 **Ramesh Adhikari**, Costas Busch, Dariusz R. Kowalski, and Abdullah Al-Mamun, "*Transaction Processing in Blockchain Sharding: Current Trends and Future Research Directions*," ACM Distributed Ledger Technologies: Research and Practice (***ACM: DLT***), 2025.

7 **Ramesh Adhikari** and Suresh Pokharel. "*Performance Evaluation of Convolutional Neural Networks Using Synthetic Medical Data Augmentation Generated by GANs*," International Journal of Image and Graphics, 2023.

Journal Articles (Under Review / Revision)

8 **Ramesh Adhikari**, Costas Busch, and Dariusz R. Kowalski, "*Stable Blockchain Sharding under Adversarial Transaction Generation*," Distributed Computing (**DC Springer**), *First Round Revision*.

9 **Ramesh Adhikari**, Costas Busch, and Miroslav Popovic, "O*n the Efficiency of Dynamic Transaction Scheduling in Blockchain Sharding*," ACM Transactions on Parallel Computing (**ACM TOPC**).

10 **Ramesh Adhikari**, Costas Busch, and Pavan Poudel, "*A Poly-Log Approximation for Transaction Scheduling in Fog–Cloud and Beyond*," Theoretical Computer Science (**TCS**), *Invited for Special Issues.*

11 **Ramesh Adhikari**, Costas Busch, and Dariusz R. Kowalski, "*Near-Optimal Stable Transaction Processing in Blockchain Sharding*," Theoretical Computer Science (**TCS**), *Invited for Special Issues***.**

Preprints

12 **Ramesh Adhikari**, Costas Busch, and Miroslav Popovic, "Fast Transaction Scheduling in Blockchain Sharding," arXiv preprint, 2024, https://arxiv.org/abs/2405.15015

GRANTS AND FUNDING

- Contributed to the preparation of **two NSF research grant proposals (CSR, AF)**
- PhD Supported by NSF Grant #2131538.
- Multiple NSF and university travel awards (SPAA, DISC, CANS).
- **Planned submissions:** NSF CAREER, NSF SaTC / CSR.

TEACHING EXPERIENCE

Guest Lecturer (Scheduled) – CSCI 8250 Quantum Computing (Graduate Level)
Augusta University, Augusta, GA, USA, Spring 2026
Topics: quantum programming, OpenQASM, Qiskit, IBM Quantum hands-on circuit execution.

Instructor (Undergraduate level)
Zenlab, Kathmandu, Nepal (2021)
Courses: Programming (Python, C, C++), Databases, Web Technologies.

Teaching Interests: Data Structures and Algorithms; Distributed Systems; Blockchain; Databases; Parallel Computing; Cybersecurity; Cloud Computing; Advanced Topics in Computer Security.

AWARDS & HONORS

- **Best Student Paper Award**, **$585**, SSS'25 (2025).
- Full Tuition Waiver and Graduate Research Assistantship, Augusta University (2022–present).
- Full Scholarship for M.E. in Computer Engineering, Pokhara University (2018).
- **NSF Student Travel Awards** (Multiple) totaling **$2,090** (SPAA 2024, DISC 2022, CANS 2023).
- **University Travel Awards** (Multiple) totaling **$2,000**, Augusta University (2023–2024).
- Star Performance Excellence Award, Sanima Bank Ltd. (2021).
- First Runner-Up in a software competition at Kantipur Engineering, Tribhuvan University (2015)

TALKS & PRESENTATIONS

Invited Talks

- Stable Blockchain Sharding under Adversarial Transaction Generation, EECS Department, Syracuse University, USA, Nov 2024.
- Stable Blockchain Sharding under Adversarial Transaction Generation, School of Computer and Cyber Sciences, Augusta University, USA, Nov 2024.

Conference Presentations

- Near-Optimal Stability for Distributed Transaction Processing in Blockchain Sharding, **SSS 2025**, Kathmandu, Nepal.
- Stable Blockchain Sharding under Adversarial Transaction Generation, **SPAA 2024**, Nantes, France.
- Lockless Blockchain Sharding with Multiversion Control, **SIROCCO 2023**, Alcala de Henares, Spain.

Poster Presentations

- Fast Transaction Scheduling in Blockchain Sharding, Research Day, Augusta University, Mar 2025.
- Efficient Transaction Processing in Blockchain Sharding, The Cyber-Physical Systems Innovation Symposium 2025, Georgia Cyber Center, USA, Sept 2025.
- Lockless Blockchain Sharding with Multiversion Control, Emerging Data Science Workshop, Augusta University, Mar 2023.

STUDENT SUPERVISION

- Sushant Dahal, B.Sc. Thesis (Co-Supervisor), Thapar Institute of Engineering and Technology, 2025
- Dipesh Bhattarai, B.Sc.Thesis (Co-Supervisor), Thapar Institute of Engineering and Technology, 2025
- Dhiraj Sharma, M.S. Thesis (Co-Supervisor), Pokhara University, 2023
- Mentored undergraduate student teams for the EVOLVE 2.0 software competition, Kathford International College, 2017

ACADEMIC SERVICE

Registration Chair, SSS 2025

Web Chair, NSF Innovation Engine Symposium on Cyber-Security and Cyber-Physical Systems (2025)

Reviewer (Journals): IEEE TGCN; IEEE TMC; Journal of Network and Computer Applications

Reviewer (Conferences): DISC'25, PODC'24, SIROCCO'24, IEEE Blockchain'23 & Blockchain'24

INDUSTRY EXPERIENCE (SELECTED)

Software Engineer, Sanima Bank, Nepal (2019–2022)
Led development of secure, scalable banking applications; integrated APIs with core banking systems

Software Engineer, SmartMobe Solutions, Nepal (2018–2019)
Developed APIs for mobile and web platforms; integrated payment gateways

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TECHNICAL SKILLS

Programming: C, C++, Python, Go, Java
Distributed & Parallel: MPI, OpenMP, CUDA
Systems & Tools: Linux, Git, AWS, LaTeX