

# Ramesh Adhikari

## Curriculum Vitae

School of Computer and Cyber Sciences  
Augusta University, Augusta, GA 30912, USA  
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Mobile: (706) 877-1337

## RESEARCH INTERESTS

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Distributed Algorithms, Blockchain Technology, Blockchain Security, Cybersecurity, Database Management, Fault Tolerance, Smart Contracts, Fog-Cloud Computing, Internet of Things, Transaction Scheduling, and Machine Learning.

## EDUCATION

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<b>Ph.D. in Computer and Cyber Sciences</b> Augusta University, Augusta, GA 30912, USA <b>Advisor:</b> Dr. Konstantin (Costas) Busch	Aug 2022 – (Expected) July 2026
<b>M.E. in Computer Engineering</b> (GPA 3.75) Pokhara University, Kathmandu, Nepal	Aug 2018 – Jan 2021
<b>B.E. in Computer Engineering</b> (78.15%) Tribhuvan University, Kathmandu, Nepal	Aug 2013 – Dec 2017

## PROFESSIONAL EXPERIENCES

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<b>Graduate Research Assistant</b> - Augusta University, Augusta, GA, USA.	August 2022 – Present
<b>Instructor (Programming languages and Database)</b> - Zenlab, Kathmandu, Nepal	Jan 2021 – Dec 2021
<b>Software Engineer</b> - Sanima Bank, Kathmandu, Nepal (3 years) - SmartMobe Solutions Pvt. Ltd, Kathmandu, Nepal (1 year)	May 2019 – Jun 2022 Feb 2018 – April 2019
<b>Part-Time Web Developer</b> - Mantra Ideas Pvt. Ltd, Lalitpur, Nepal (2 years)	July 2015 – Dec 2017

## PUBLICATIONS

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- [1] **Ramesh Adhikari**, Costas Busch, and Miroslav Popovic. On the Efficiency of Dynamic Transaction Scheduling in Blockchain Sharding. In Proceedings of the 39th International Symposium on Distributed Computing (DISC 2025).
- [2] **Ramesh Adhikari**, Costas Busch, and Dariusz R. Kowalski. Near-Optimal Stable Transaction Processing in Blockchain Sharding. In Proceedings of the 27th International Symposium on Stabilization, Safety, and Security of Distributed Systems (SSS 2025).
- [3] **Ramesh Adhikari**, Costas Busch, and Pavan Poudel. A Poly-Log Approximation for Transaction Scheduling in Fog-Cloud and Beyond. In Proceedings of the 27th International Symposium on Stabilization, Safety, and Security of Distributed Systems (SSS 2025).

- [4] **Ramesh Adhikari**, Costas Busch, and Dariusz R. Kowalski. Stable Blockchain Sharding under Adversarial Transaction Generation. In Proceedings of the 36th ACM Symposium on Parallelism in Algorithms and Architectures (SPAA 2024), pp. 451-461. 2024.
- [5] **Ramesh Adhikari**, Costas Busch, and Miroslav Popovic, [Fast Transaction Scheduling in Blockchain Sharding](#), arXiv: preprint, 2024.
- [6] **Ramesh Adhikari** & Costas Busch, Lockless Blockchain Sharding with Multiversion Control. In International Colloquium on Structural Information and Communication Complexity (SIROCCO 2023), pp. 112-131.
- [7] **Ramesh Adhikari** and Suresh Pokharel, Performance Evaluation of Convolutional Neural Network Using Synthetic Medical Data Augmentation Generated by GAN. *International Journal of Image and Graphics* 23, no. 01 (2023): 2350002.

#### **Under Review:**

- [8] **Ramesh Adhikari**, Costas Busch, and Dariusz R. Kowalski, Stable Blockchain Sharding under Adversarial Transaction Generation, *Distributed Computing Journal*, 2025.
- [9] **Ramesh Adhikari**, Costas Busch, Dariusz R. Kowalski, Abdullah Al-Mamun, Transaction Processing in Blockchain Sharding: Current Trends and Future Research Directions, *ACM Journals: Distributed Ledger Technologies: Research and Practice*, 2025.

## **STUDENT CO-SUPERVISION AND MENTORSHIP**

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**Dhiraj Sharma**, Master's Student, thesis co-supervised  
Pokhara University, Kathmandu, Nepal.

Spring, 2023

**Sagar Khatri**, Web Developer, mentored  
Sanima Bank, Kathmandu, Nepal.

Jan 2021 – Jun 2022

## **AWARDS AND HONORS**

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- **Full Tuition Waiver and Graduate Assistantship**, Augusta University, 2022- Present.
- **NSF Student Travel Awards**, \$1000 from SPAA 2024 conference, June 2024.
- **Student Travel Award**, \$1000 from the Graduate School, Augusta University, April 2024.
- **NSF Student Travel Awards**, \$650 for CANS conference, Nov 2023.
- **Student Travel Award**, \$1000 from the Graduate School, Augusta University, Mar 2023.
- **NSF Student Travel Award**, \$100, Data Science Workshop, Augusta University, Feb 2023.
- **NSF Student Travel Award**, \$340 for DISC conference, Oct 2022.
- **Star Performance Excellence Award**, at Sanima Bank Ltd, 2021.
- **Granted a Full Scholarship** for a Master of Science in Computer Engineering from Pokhara University, 2018.

## **TEACHING EXPERIENCE**

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**Part-Time Instructor, Zenlab, Kathmandu, Nepal:** Taught programming languages and databases for undergraduate students, which included the following courses:

- Programming Languages: Python, C
- Database: MySQL, SQL Server
- Web Technology: HTML, CSS, JavaScript

## PRESENTATIONS AND INVITED TALKS

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- Stable Blockchain Sharding under Adversarial Transaction Generation, 36th ACM Symposium on Parallelism in Algorithms and Architectures (SPAA 2024) in Nantes, France (Jun 2024) [Conference paper presentation].
- Lockless Blockchain Sharding with Multiversion Control, 30th International Colloquium on Structural Information and Communication Complexity (SIROCCO), Spain (Jun 2023) [Conference paper presentation].
- Fast Transaction Scheduling in Blockchain Sharding, 40th Annual Graduate Research Day at Augusta University, USA (Mar 2025) [Poster presentation].
- Lockless Blockchain Sharding with Multiversion Control, 3rd annual workshop on Emerging Data Science and Cyber Data at Augusta University, USA (Mar 2023) [Poster presentation].
- Stable Blockchain Sharding under Adversarial Transaction Generation, Electrical Engineering and Computer Science (EECS) Department at Syracuse University, USA (Nov 2024) [Invited talk].
- Stable Blockchain Sharding under Adversarial Transaction Generation, School of Computer and Cyber Sciences Department at Augusta University, USA (Nov 2024). [Invited talk].

## ACADEMIC SERVICES

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**Registration Chair:** 27th International Symposium on Stabilization, Safety, & Security of Distributed Systems, 2025.

**Web Chair:** NSF Innovation Engine Symposium on Cyber-Security and Cyber-Physical Systems, 2025

### Reviewer Journals

- Invited Reviewer, IEEE Transactions on Green Communications and Networking (2024).
- External Reviewer, Journal of Network and Computer Applications (2024).
- External Reviewer, Blockchain: Research and Applications (2024).
- External Reviewer, IEEE Transactions on Mobile Computing, (2024).
- External Reviewer, IEEE Transactions on Network and Service Management (2022).

### Reviewer Conferences

- Invited Reviewer, DISC 2025, PODC 2024, SIROCCO 2024, SIGMIS CPR 2024.
- External Reviewer, IEEE Blockchain 2023, IEEE Blockchain 2024.

## INDUSTRY EXPERIENCES

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**Software Engineer** | Sanima Bank | Kathmandu, Nepal

May 2019 – Jun 2022

- Led digital transformation in the Technical Innovation Department.
- Developed and automated web applications to streamline banking operations and improve user experience.
- Integrated APIs and Core Banking System to enhance the real-time data exchange.
- Improved application security and compliance with IS recommendations.

- **Technologies Used:** Python, Batch Scripts, Java, PHP (Laravel), SQL Server, MySQL, JavaScript, Apache, Git.

**Software Engineer** | SmartMobe Solutions Pvt. Ltd | Kathmandu, Nepal

Feb 2018 – Apr 2019

- Collaborated with a 30-member team to develop cutting-edge APIs for mobile and web apps.
- Developed the API to integrate the Android and IOS applications.
- Integrated the third-party payment gateway in the web application and API.
- Focused on scalable, secure application architecture and researched new tools for improved efficiency.
- **Technologies Used:** AWS, MySQL, PHP (Laravel), Python, AngularJS, HTML, CSS, Stripe Payment Gateway.

## TECHNICAL SKILLS

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- **Operating Systems:** Linux, Windows, Mac OS
- **Programming Languages:** C, C++, Python, GO, PHP, JAVA
- **Parallel Computing Frameworks:** MPI, OpenMP, CUDA
- **Data Mining Tools:** Pandas, Numpy, Matplotlib, Tableau
- **Web Technologies:** HTML, CSS, JavaScript, Ajax/jQuery, WordPress, WAMP/XAMPP
- **Databases:** MySQL, SQLite, SQL Server, MongoDB
- **Version Control:** Git, SVN
- **IDE and Services:** IntelliJ IDEA, Visual Studio, Jupyter Notebook, PyCharm, Packet Tracer, AWS, LATEX

## REFERENCES

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- **Dr. Konstantin (Costas) Busch**, Professor & Chair, Department of Computer Science, School of Computer and Cyber Sciences, Augusta University. Email: [kbusch@augusta.edu](mailto:kbusch@augusta.edu), Contact: +1 225-754-2972.
- **Dr. Dariusz Kowalski**, Professor, School of Computer and Cyber Sciences, Augusta University. Email: [dkowalski@augusta.edu](mailto:dkowalski@augusta.edu)
- **Dr. Pavan Poudel**, Assistant Professor, Department of Computer Science, University of Houston-Clear Lake. Email: [poudel@uhcl.edu](mailto:poudel@uhcl.edu)
- **Dr. Abdullah Al-Mamun**, Assistant Professor, School of Computer and Cyber Sciences, Augusta University. Email: [aalmamun@augusta.edu](mailto:aalmamun@augusta.edu)