
CONTACT INFORMATION	Computer Science Department Boston University CDS 925, 665 Commonwealth Avenue Boston, MA 02215 E-mail: papon@bu.edu, tarikulpapon@gmail.com Website: https://cs-people.bu.edu/papon
RESEARCH INTERESTS	Databases, Data Management, Data Systems, Storage Systems, Flash Memory, Near-Data Processing, Disaggregated Memory and Storage.
PROFESSIONAL EXPERIENCE	<ul style="list-style-type: none"> • CS Preceptor at SEAS, Harvard University, MA, USA Jan '25 - Present • PhD Researcher at Boston University, MA, USA Sept '19 - May '25 • Course Instructor at Boston University, MA, USA Spring 2024 • Research Scientist Intern at Intel Corporation, CA, USA May '22 - Sept '22 I worked with the Parallel Computing Lab on creating hardware embedding for general-purpose CPUs. • Research Intern at Microsoft Research, WA, USA May '21 - Aug '21 I worked with MSR's Data Systems Group on column-store reclustering. • Lecturer at CSE, BUET, Dhaka, Bangladesh Oct '15 - Aug '19
EDUCATION	<p>Ph.D. in Computer Science, 2019 - 2025 Boston University, Massachusetts, USA. Thesis: "Exploiting SSD Properties to Enhance Data Systems Performance"</p> <p>M.Sc. in Computer Science and Engineering, 2016 - 2019 Bangladesh University of Engineering and Technology (BUET), Dhaka, Bangladesh. Thesis: "Design and Development of A Deep Learning Based Application for Detecting Diabetic Retinopathy"</p> <p>B.Sc. in Computer Science and Engineering, 2010 - 2015 Bangladesh University of Engineering and Technology (BUET), Dhaka, Bangladesh. Thesis: "Photoplethysmographic Analysis of Optical Signals : A Single Device to Measure All the Vital Signs"</p>
SCHOLARSHIPS AND AWARDS (SELECTED)	<ul style="list-style-type: none"> • CS Teaching Excellence Award, Boston University 2025 • SIGMOD Student Travel Grant, SIGMOD 2025 • SIGMOD Travel Scholarship, SIGMOD 2024 • Best Demo Award, VLDB 2023 • Travel Award, IEEE ICDE 2023 • CS Research Excellence Award, Boston University 2022 • Dean's Fellowship, Boston University Fall 2019 • Dean's Honor List in all 4 levels of Undergrad 2010-2015 • University Merit Scholarship in all 8 semesters of Undergrad 2010-2015 • Champion of the Intra University Database Project Show, BUET 2013 • Champion of the Intra University Robotics Contest, BUET 2012 • Champion of the Intra University Logic Olympiad, BUET 2012

PUBLICATIONS

1. Teona Bagashbili, **Tarikul Islam Papon**, Manos Athanassoulis. *ACE-in-Action: A Smart DBMS Bufferpool for SSDs*, In Proceedings of the ACM on Management of Data (**SIGMOD**), 2025. (Demonstration)
2. **Tarikul Islam Papon**, Taishan Chen, Shuo Zhang, Manos Athanassoulis. *CAVE: Concurrency-Aware Graph Processing on SSDs*, In Proceedings of the ACM on Management of Data (**SIGMOD**), 2024.
3. **Tarikul Islam Papon**, Ju Hyoung Mun, Konstantinos Karatsenidis, Shahin Roozkhosh, Denis Hoornaert, Ahmed Sanaullah, Ulrich Drepper, Renato Mancuso, Manos Athanassoulis. *Effortless Locality on Data Systems using Relational Fabric*, IEEE Transactions on Knowledge and Data Engineering (**TKDE**), 2024.
4. **Tarikul Islam Papon**. *Enhancing Data Systems Performance by Exploiting SSD Concurrency & Asymmetry*, In Proceedings of the IEEE International Conference on Data Engineering (**ICDE**) PhD Symposium, 2024.
5. **Tarikul Islam Papon**, Abdul Wasay. *Silhouette: Toward Performance-Conscious and Transferable CPU Embeddings*, Workshop on ML for Systems at the Conference on Neural Information Processing Systems (**ML-for-Systems@NeurIPS**), 2023.
6. Subhadeep Sarkar, **Tarikul Islam Papon**, Dimitris Staratzis, Zichen Zhu, Manos Athanassoulis. *Enabling Timely and Persistent Deletion in LSM-Engines*, ACM Transactions on Database Systems (**TODS**), 2023.
7. Ju Hyoung Mun, Konstantinos Karatsenidis, **Tarikul Islam Papon**, Shahin Roozkhosh, Denis Hoornaert, Ulrich Drepper, Ahmed Sanaullah, Renato Mancuso, Manos Athanassoulis. *On-the-fly Data Transformation in Action*, In Proceedings of the **VLDB** Endowment, 2023. (Demonstration) [**Best Demo Award**]
8. Renato Mancuso, Shahin Roozkhosh, Denis Hoornaert, Ju Hyoung Mun, **Tarikul Islam Papon**, Manos Athanassoulis. *Software-Shaped Platforms*, In Proceedings of the Cyber-Physical Systems and Internet of Things Week (**CPS-IoT Week Workshops**), 2023.
9. **Tarikul Islam Papon**, Manos Athanassoulis. *ACEing the Bufferpool Management Paradigm for Modern Storage Devices*, In Proceedings of the IEEE International Conference on Data Engineering (**ICDE**), 2023.
10. **Tarikul Islam Papon**, Ju Hyoung Mun, Shahin Roozkhosh, Denis Hoornaert, Ahmed Sanaullah, Ulrich Drepper, Renato Mancuso, Manos Athanassoulis. *Relational Fabric: Transparent Data Transformation [Vision]*, In Proceedings of the IEEE International Conference on Data Engineering (**ICDE**), 2023. [**Invited for IEEE TKDE Special Issue for ICDE 2023 Best and Innovation Papers.**]
11. Shahin Roozkhosh, Denis Hoornaert, Ju Hyoung Mun, **Tarikul Islam Papon**, Ahmed Sanaullah, Ulrich Drepper, Renato Mancuso, Manos Athanassoulis. *Relational Memory: Native In-Memory Accesses on Rows and Columns*, In Proceedings of the International Conference on Extending Database Technology (**EDBT**), 2023.
12. Manos Athanassoulis, Subhadeep Sarkar, **Tarikul Islam Papon**, Zichen Zhu, Dimitris Staratzis. *Building Deletion-Compliant Data Systems*, IEEE Data Engineering Bulletin (**IEEE DEBull**), 2022.
13. T. M. Tariq Adnan, Md. Saiful Islam, **Tarikul Islam Papon**, Shourav Nath, Muhammad Abdullah Adnan. *UACD: A Local Approach for Identifying the Most Influential Spreaders in Twitter in a Distributed Environment*, Social Network Analysis and Mining (**SNAM**), 12(1), 1-21, Springer, 2022.
14. **Tarikul Islam Papon**, Manos Athanassoulis. *A Parametric I/O Model for Modern Storage Devices*, In Proceedings of the International Workshop on Data Management on New Hardware (**DaMoN**), 2021.

15. **Tarikul Islam Papon**, Manos Athanassoulis. *The Need for a New I/O Model*, Conference on Innovative Data Systems Research (**CIDR**), 2021. (Abstract) **[Honorable Mention for Best Gong Show Talk]**
16. Subhadeep Sarkar, **Tarikul Islam Papon**, Dimitris Staratzis, Manos Athanassoulis. *Lethe: A Tunable Delete-Aware LSM Engine*, In Proceedings of the ACM **SIGMOD** International Conference on Management of Data, 2020.
17. Sadia Tamanna Khan, Ashef Ainan Baksh, **Tarikul Islam Papon**, Muhammad Ashraf Ali. *Rainwater Harvesting System: An Approach for Optimum Tank Size Design and Assessment of Efficiency*, International Journal of Environmental Science and Development (**IJESD**), 8(1), 37-43, 2017.
18. **Tarikul Islam Papon**, Ishtiyaque Ahmad, Nazmus Saquib and Ashikur Rahman. *Non-invasive Heart Rate Measuring Smartphone Applications using On-board Cameras: A Short Survey*. The 1st International Conference on Networking Systems and Security (**NSysS**), January 5-7, 2015, Dhaka, Bangladesh.
19. Nazmus Saquib, **Tarikul Islam Papon**, Ishtiyaque Ahmad and Ashikur Rahman. *Measurement of Heart Rate Using Photoplethysmography*. The 1st International Conference on Networking Systems and Security (**NSysS**), January 5-7, 2015, Dhaka, Bangladesh.

RESEARCH
TALKS

1. “Optimizing Data Systems for Modern Storage and Memory Technology”, Oct 2024, *Guest Lecture@COSI 127B*, Brandeis University, Waltham, USA.
2. “CAVE: Concurrency-Aware Graph Processing System on SSDs”, June 2024, *SIGMOD*, Santiago, Chile.
3. “Concurrency-Aware Graph Processing System for SSD”, May 2024, *NEDB Day*, Boston, USA.
4. “ACEing the Bufferpool Management Paradigm for Modern Storage Devices”, Apr 2023, *ICDE*, Anaheim, USA.
5. “The Parametric I/O Model & its Applicability on DBMS Bufferpool”, Mar 2023, *Guest Lecture@CS 561*, Boston University, USA.
6. “Can we make Asymmetry/Concurrency-Aware Bufferpool Manager for SSDs?”, December 2022, DIAS Group, EPFL, Lausanne, Switzerland.
7. “Asymmetry/Concurrency-Aware Bufferpool Manager for Modern Storage Devices”, April 2022, University of Wisconsin-Madison, USA.
8. “A Parametric I/O Model for Modern Storage Devices”, June 2021, *DaMoN Workshop*, China.
9. “The Case for a Parametric I/O Model”, May 2020, *MiDAS Seminar*, Boston University, USA.

MEDIA
INTERVIEW

- “ACEing the Bufferpool Management Paradigm for Modern Storage Devices”, Disseminate: The Computer Science Research Podcast, June 2023.

POSTERS AND
PRESENTATIONS

1. *ReStore: RL-Based Data Migration for Multi-Tiered Storage*, Poster at North East Database (NEDB) Day, Brandeis University, Waltham, USA, 2025.
2. • *CAVE: Concurrency-Aware Graph Processing System for SSD*, • *ZNS SSDs: Architectural Insights and Performance Analysis*, Posters at North East Database (NEDB) Day, Boston University, Boston, USA, 2024.
3. • *ACE Bufferpool Management for SSDs*, • *Relational Fabric: Effortless Locality for Data-intensive Systems*, • *Relational Memory: Native In-Memory Accesses on Rows and Columns*, • *Building Robust LSM-based Data Stores*, Posters at North East Database (NEDB) Day, Northeastern University, Boston, USA, 2023.
4. *Relational Memory: Native In-Memory Stride Access*, Poster & Presentation at DevConf. US 2022, Boston, USA.
5. *Lethe: A Delete-Aware LSM Engine*, Poster at North East Database Day 2020.

TEACHING
EXPERIENCE
(SELECTED)

Boston University (Course Instructor)

- CS 561 (Data Systems Architectures) Spring 2024

Boston University (Teaching Fellow)

- CS 210 (Computer Systems) Fall 2023
- CS 561 (Data Systems Architectures) Spring 2023, Spring 2021
- CS 460 (Introduction to Database Systems) Fall 2021
- CS 460 (Introduction to Database Systems) Fall 2020

Bangladesh University of Engg. and Tech. (Lecturer)

2015 - 2019

Theory Courses

- CSE 453 (High-Performance Database Systems) Jan 2019
- CSE 433 (Digital Image Processing) Jan 2018, Jul 2016
- CSE 317 (Numerical Methods) Jul 2017
- CSE 307 (Software Engineering & Information System Design) Jan 2017

Lab Courses

- CSE 218 (Numerical Methods Lab) Jan 2019
- CSE 410 (Computer Graphics Lab) Jan 2019
- CSE 322 (Computer Networks Lab) Jul 2018, Jan 2016
- CSE 208 (Data Structures & Algorithms II Lab) Jul 2018
- CSE 108 (Object Oriented Programming Lab) Jul 2018, Jul 2017
- CSE 308 (Software Engineering Lab) Jan 2018, Jan 2017
- CSE 206 (Digital Logic Design Lab) Jan 2018, Jan 2016
- CSE 102 (Structured Programming Language Lab) Jan 2018
- CSE 216 (Database Lab) Jul 2017, Jul 2016
- CSE 402 (Artificial Intelligence Lab) Jul 2016
- CSE 404 (Digital System Design Lab) Jul 2016, Jan 2016
- CSE 214 (Assembly Language Lab) Jul 2016

SUPERVISION &
MENTORSHIP
(SELECTED)

- Aditya Chowdhri and Panos Koutsoukos, *Undergrad Intern.* Fall 24, Spring 25
Topic: Benchmarking Large-Scale Graph Processing Systems.
- Yiyun Zheng, *Undergraduate Visiting Intern.* Fall 2024
Topic: Sieve Page Replacement Policy for Database operations.
- Prisha Shah, *High-school RISE Intern.* Summer 2024
Topic: Evaluation of Sieve Page Replacement Policy.
- Ronin Bae, *High-school Research Intern.* Spring, Summer 2023
Topic: Visualizing the ACE bufferpool in action.
- Shuo Zhang & Taishan Chen, *Undergrad Research Intern* Summer, Fall 2022
Topic: Concurrent Graph/Tree Traversal in Modern Storage Devices.
- Subin (Rachael) Kim, *High-school Research Intern.* Fall 2020 - Spring 2021
Topic: Visualizing the impact of the Parametric I/O Model for different workloads.
- Zheng Hui, *Undergrad Research Intern* Fall 2020
Topic: Designing a concurrency-aware graph traversal algorithm.

PROFESSIONAL
SERVICES

- **PC Member**, SIGMOD Demo 2025
- **Journal Reviewer**
 - ACM Transactions on Knowledge Discovery from Data (TKDD)
 - Transactions on Database Systems (TODS)
 - Journal of Systems Architecture (JSA)
 - Journal of Big Data
 - IEEE BigData
- **Shadow PC Member**, EuroSys 2024
- **Society Member**, Association for Computing Machinery (ACM), ACM Special Interest Group on Management of Data (SIGMOD), Institute of Electrical and Electronics Engineer (IEEE)
- **Member**, Sponsorship and Finance Committee, International Conference on Networking, Systems and Security (NSysS 2016 – 2018)

CONSULTANCY
PROJECTS
(SELECTED)

- Testing and Certification of the Flora Bank Core Banking System (2018-2019)
- Development of Android Based I-Books & Associated Services for Bangladesh Technical Education Board and Madrasah Education Board (2016-2019)
- Development, Supply & Installation of Multi-Language Training Software titled “*Vashaguru*” for Sheikh Russell Digital Labs in Bangladesh (2017-2018)
- XI Class Admission in Bangladesh (Session: 2016-2017, 2017-2018)

EXTRA-
CURRICULAR
ACTIVITIES
(SELECTED)

- **Runner Up**, BU ECE Table Tennis League - Season 1, 2023
- **Student Volunteer** in ICDE 2023, VLDB 2020 conference
- **Convener** of BUET CSE Festival 2019
- **Runner Up** of Intra University Faculty Bridge Competition, BUET, 2017
- **Trainer** at Bangladesh Bank IT Training on Java Spring, 2016
- **Lead Organizer & Treasurer** of BUET CSE Festival 2015
- **Champion** of the Intra BUET Poker Tournament, BUET CSE Festival 2015
- **Branch Coordinator & Lecturer** at Sunrise Coaching Center, 2010 – 2014