Rifat Shahriyar

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Department of Computer Science and Engineering
Bangladesh University of Engineering and Technology
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Research Interests

My research interests are memory management (garbage collection), programming language, software engineering, and natural language processing.

Employment

- **Bangladesh University of Engineering and Technology** — Dhaka, Bangladesh
  Professor, Department of Computer Science and Engineering — Dec 2020 - Date

- **Bangladesh University of Engineering and Technology** — Dhaka, Bangladesh
  Associate Professor, Department of Computer Science and Engineering — Oct 2017 - Dec 2020

- **Bangladesh University of Engineering and Technology** — Dhaka, Bangladesh
  Assistant Professor, Department of Computer Science and Engineering — May 2010 - Oct 2017

- **Bangladesh University of Engineering and Technology** — Dhaka, Bangladesh
  Lecturer, Department of Computer Science and Engineering — June 2007 - May 2010

Education

- **Australian National University** — Canberra, Australia
  Ph.D. in Computer Science — September 2010 - April 2015
  - Thesis: High Performance Reference Counting and Conservative Garbage Collection
  - Supervisors: Prof. Steve Blackburn and Prof. Kathryn McKinley

- **Bangladesh University of Engineering and Technology** — Dhaka, Bangladesh
  M.Sc. in Computer Science and Engineering — October 2007 - December 2009
  - Thesis: A Distributed Optimized Resource Reservation Scheme for Grid Computing
  - Supervisor: Prof. Md. Mostofa Akbar

- **Bangladesh University of Engineering and Technology** — Dhaka, Bangladesh
  B.Sc. in Computer Science and Engineering — April 2002 - May 2007
  - Thesis: Controlling Remote Systems using Mobile Telephony
  - Supervisor: Prof. Md. Mostofa Akbar

Publications

42. F. T. Islam, T. Hashem and R. Shahriyar, **'A Crowd-Enabled Approach for Privacy-Enhanced and Personalized Safe Route Planning for Fixed or Flexible Destinations'**, IEEE Transactions on Knowledge and Data Engineering, 2023.

41. A. Bhattacharjee, T. Hasan, W. U. Ahmad, R. Shahriyar, **'BanglaNLG: Benchmarks and Resources for Evaluating Low-Resource Natural Language Generation in Bangla'**, to appear in Findings of European Chapter of the Association for Computational Linguistics, EACL 2023.

40. A. Bhattacharjee, T. Hasan, K. Samin, M. S. Islam, W. U. Ahmad, A. Iqbal, M. S. Rahman, R. Shahriyar, **'BanglaBERT: Language Model Pretraining and Benchmarks for Low-Resource Language Understanding Evaluation in Bangla'**, in Findings of North American Chapter of the Association for Computational Linguistics, NAACL 2022.

39. A. Akil, N. Sultana, A. Bhattacharjee, R. Shahriyar, **'BanglaParaphrase: A High-Quality Bangla Paraphrase Dataset'**, in Proceedings of the 2nd Conference of the Asia-Pacific Chapter of the Association for Computational Linguistics and the 12th International Joint Conference on Natural Language Processing, AACL-IJCNLP 2022.

38. S. Gehrmann et al., **'GEMv2: Multilingual NLG Benchmarking in a Single Line of Code'**, in Proceedings of the The 2022 Conference on Empirical Methods in Natural Language Processing: System Demonstrations, EMNLP 2022.

37. K. Islam, T. Ahmed, R. Shahriyar, A. Iqbal, G. Uddin, **'Early prediction for merged vs abandoned code changes in modern code reviews'**, Information and Software Technology, Volume 142 (106756), February 2022.

36. S. S. R. Jony, R. Shahriyar, M. S. Rahman, M. S. Rahman, T. Alam, **'Linking Tweets Towards Geo-Localized Policies: COVID-19 Perspective'**, Studies in Health Technology and Informatics, Volume 290, June 2022.

35. K. Hasan, P. Chakraborty, R. Shahriyar, A. Iqbal, G. Uddin, **'A Survey-Based Qualitative Study to Characterize Expectations of Software Developers from Five Stakeholders'**, to appear in Proceedings of the 15th ACM/IEEE International Symposium on Empirical Software Engineering and Measurement, ESEM 2021, Bari, Italy, 2021.

34. T. Hasan, A. Bhattacharjee, M. S. Islam, K. Samin, Y. Li, Y. Kang, M. S. Rahman, R. Shahriyar, **'XL-Sum: Large-Scale Multilingual Abstractive Summarization for 44 Languages'**, in Findings of the Association for Computational Linguistics, ACL-IJCNLP 2021.

33. M. Hasan, T. Muttaqueen, A. A. Ishtiaq, K. S. Mehrab, M. M. A. Haque, T. Hasan, W. Ahmad, A. Iqbal, R. Shahriyar, **'CoDesc: A Large Code–Description Parallel Dataset'**, in Findings of the Association for Computational Linguistics, ACL-IJCNLP 2021.

32. S. R. Zaman, D. Sadekeen, A. Alfaz, R. Shahriyar, **'One Source to Detect them All: Gender, Age, and Emotion Detection from Voice'**, in Proceedings of the 2021 IEEE 45th Annual Computer Software and Applications Conference, COMPSAC 2021.

31. P. Chakraborty, R. Shahriyar, A. Iqbal, G. Uddin, **'How Do Developers Discuss and Support New Programming Languages in Technical Q&A Site? An Empirical Study of Go, Swift, and Rust in Stack Overflow'**, Information and Software Technology, Volume 137 (106603), September 2021.

30. R. Rahman, M. R. Rahman, N. I. Tripto, S. H. Apon, M. E. Ali, R. Shahriyar, **'AdolescentBot: Understanding Opportunities for Chatbots in Combating Adolescence Sexual and Reproductive Health Problems in Bangladesh'**, in the ACM CHI Conference on Human Factors in Computing Systems, CHI 2021.

29. F. T. Islam, T. Hashem and R. Shahriyar, **'A Privacy-enhanced and Personalized Safe Route Planner with Crowdsourced Data and Computation'**, in Proceedings of the 37th IEEE International Conference on Data Engineering, ICDE 2021, Chania, Greece, 2021.

28. M. L. Siddiq, M. R. R. Jahin, M. R. U. Islam, R. Shahriyar and A. Iqbal, **'SQLIFIX: Learning Based Approach to Fix SQL Injection Vulnerabilities in Source Code'**, in Proceedings of the 28th IEEE International Conference on Software Analysis, Evolution and Reengineering, SANER 2021.

27. S. Islam, K. Hasan and R. Shahriyar, **'Mining Developer Questions about Major NoSQL Databases'**, International Journal of Computer Applications, vol. 174, iss. 13, p. 1-8, 2021.

26. T. Hasan, A. Bhattacharjee, K. Samin, M. Hasan, M. Basak, M. S. Rahman and R. Shahriyar, **'Not Low-Resource Anymore: Aligner Ensembling, Batch Filtering, and New Datasets for Bengali-English Machine Translation'**, in Proceedings of the 2020 Conference on Empirical Methods in Natural Language Processing, EMNLP 2020.

25. M. A. Nayeem, M. S. Bayzid, A. H. Rahman, R. Shahriyar, and M. S. Rahman, **'Multiobjective Formulation of Multiple Sequence Alignment for Phylogeny Inference'**, IEEE Transactions on Cybernetics, 2020.

24. A. Bosu, A. Iqbal, R. Shahriyar, and P. Chakraborty, **'Understanding the Motivations, Challenges and Needs of Blockchain Software Developers: A Survey'**, Empirical Software Engineering, vol. 24, iss. 4, p. 2636-2673, 2019.

23. M. A. Nayeem, M. S. Bayzid, A. H. Rahman, R. Shahriyar, and M. S. Rahman, **'A Phylogeny-aware Multi-objective Optimization Approach for Computing MSA'**, in Proceedings of the The Genetic and Evolutionary Computation Conference, GECCO 2019, Prague, Czech Republic, 2019.

22. P. Chakraborty, R. Shahriyar, and A. Iqbal, **'Empirical Analysis of the Growth and Challenges of New Programming Languages'**, in Proceedings of the 2019 IEEE 43rd Annual Computer Software and Applications Conference, COMPSAC 2019, Milwaukee, Wisconsin, USA, 2019.

21. M. R. U. Islam, M. S. Islam, Z. Ahmed, A. Iqbal, and R. Shahriyar, **'Automatic Detection of NoSQL Injection Using Supervised Learning'**, in Proceedings of the 2019 IEEE 43rd Annual Computer Software and Applications Conference, COMPSAC 2019, Milwaukee, Wisconsin, USA, 2019.

20. S. A. Hassan, D. Das, A. Iqbal, A. Bosu, R. Shahriyar, and T. Ahmed, **'SOQDE: A Supervised Learning based Question Difficulty Estimation Model for Stack Overflow'**, in Proceedings of the 25th Asia-Pacific Software Engineering Conference, APSEC 2018, Nara, Japan, 2018.

19. P. Chakraborty, R. Shahriyar, A. Iqbal, and A. Bosu, **'Understanding the Software Development Practices of Blockchain Projects: A Survey'**, in Proceedings of the 12th International Symposium on Empirical Software Engineering and Measurement, ESEM 2018, Oulu, Finland, 2018.

18. Z. Mehrab, R. B. Yousuf, I. A. Tahmid, and R. Shahriyar, **'Mining Developer Questions about Major Web Frameworks'**, in Proceedings of the 14th International Conference on Web Information Systems and Technologies, WEBIST 2018, Seville, Spain, 2018.

17. N. S. Sattar, T. Aqila, and R. Shahriyar, **'Towards concurrent data structure development with Relaxed Synchronization'**, in Proceedings of the 9th International Conference on Electrical and Computer Engineering, ICECE 2016, Dhaka, Bangladesh, 2016.

16. B. Islam, F. Hossain, and R. Shahriyar, **'High Performance Approximate Computing by Adaptive Relaxed Synchronization'**, in Proceedings of 18th IEEE International Conference on High Performance Computing and Communications, HPCC 2016, Sydney, Australia, 2016.

15. M. Tasnim, R. Shahriyar, N. Nahar, and H. Mahmud, **'Intelligent Depression Detection and Support System: Statistical Analysis, Psychological Review and Design Implication'**, in Proceedings of IEEE 18th International Conference on e-Health Networking, Applications and Services, Healthcom 2016, Munich, Germany, September 14-16, 2016.

14. A. Sultana, M. Naznin, and R. Shahriyar, **'Conflicting Goal Constrained Architecture of a Heterogeneous Mobile Sensor Network'**, in Proceedings of the 2nd International Conference on Networking Systems and Security, NSysS 2016, Dhaka, Bangladesh, 2016.

13. M. R. Haque, M. Naznin, and R. Shahriyar, **'Distributed Low Overhead ID in a Wireless Sensor Network'**, in Proceedings of the 17th International Conference on Distributed Computing and Networking, ICDCN 2016, Singapore, 2016.

12. R. Shahriyar, S. M. Blackburn, and K. S. McKinley, **'Fast Conservative Garbage collection'**, ACM SIGPLAN Notices, vol. 49, iss. 10, p. 121-139, 2014.

11. R. Shahriyar, S. M. Blackburn, and K. S. McKinley, **'Fast Conservative Garbage collection'**, in Proceedings of the 25th ACM SIGPLAN conference on Object Oriented Programming Systems, Languages and Applications, OOPSLA'14, Portland, USA, 2014.

10. R. Shahriyar, S. M. Blackburn, X. Yang, and K. S. McKinley, **'Taking Off the Gloves with Reference Counting Immix'**, ACM SIGPLAN Notices, vol. 48, iss. 10, p. 93-110, 2013.

9. R. Shahriyar, S. M. Blackburn, X. Yang, and K. S. McKinley, **'Taking Off the Gloves with Reference Counting Immix'**, in Proceedings of the 24th ACM SIGPLAN conference on Object Oriented Programming Systems, Languages and Applications, OOPSLA'13, Indianapolis, USA, 2013.

8. R. Shahriyar, S. M. Blackburn, and D. Frampton, **'Down for the Count? Getting Reference Counting Back in the Ring'**, in Proceedings of the Eleventh ACM SIGPLAN International Symposium on Memory Management, ISMM'12, Beijing, China, June 15-16, 2012.

7. R. Shahriyar, M. M. Akbar, M. S. Rahman, M. F. Bari, and S. Shahriyar, **'CORS - A Cost Optimized Resource Reservation Scheme for Grid'**, in Proceedings of the International Conference on Parallel and Distributed Processing Techniques and Applications, PDPTA '11, Las Vegas, Nevada, USA, July 18-21, 2011.

6. R. Shahriyar, M. F. Bari, G. Kundu, S. I. Ahamed, and M. M. Akbar, **'Intelligent Mobile Health Monitoring System (IMHMS)'**, International Journal of Control and Automation (IJCA), vol. 2, iss. 3, 2009.

5. R. Shahriyar, M. F. Bari, G. Kundu, S. I. Ahamed, and M. M. Akbar, **'Intelligent Mobile Health Monitoring System (IMHMS)'**, in Proceedings of Second International ICST Conference on Electronic Healthcare for the 21st century, eHealth 2009, Istanbul, Turkey, September 23-15, 2009.

4. S. Sultana, R. Karim, R. Shahriyar, M. M. Akbar, and S. I. Ahamed, **'Ubiquitous Secretary: A Ubiquitous Computing Application based on Web Services Architecture'**, International Journal of Multimedia and Ubiquitous Engineering (IJMUE), vol. 4, iss. 4, 2009.

3. M. F. Bari, M. S. Rahman, and R. Shahriyar, **'Finding all covers of an indeterminate string in O(n) time on average'**, in Proceedings of the Prague Stringology Conference, PSC 2009, Prague, Czech Republic, August 31 - September 2, 2009.

2. R. Shahriyar, E. Hoque, I. Naim, S. Sohan, M. M. Akbar, and M. Khan, **'Controlling Remote Systems using Mobile Telephony'**, International Journal of Smart Home (IJSH), vol. 2, iss. 3, 2008.

1. R. Shahriyar, E. Hoque, I. Naim, S. Sohan and M. M. Akbar, **'Controlling Remote Systems using Mobile Telephony'**, in Proceedings of the 1st International Conference on MOBILe Wireless MiddleWARE, Operating Systems, and Applications, Mobilware 2008, Innsbruck, Austria, February 13 - 15, 2008.

Awards and Honours

- ACM SIGPLAN PAC Grant to attend ASPLOS 2015

- ACM SIGPLAN PAC Grant to attend OOPSLA 2013

- ANU Vice-Chancellor's HDR Travel Grant to attend ISMM and PLDI 2012

- ANU University Research Scholarship (2010 - 2014)

- ANU Research Supplementary Scholarship (2010 - 2014)

- Endeavour International Postgraduate Research Scholarship from University of Melbourne (2010 - 2014, Not Availed)

- University of Melbourne International Research Scholarship (2010 - 2014, Not Availed)

- University Merit Scholarships in Bangladesh University of Engineering and Technology for academic results

- Dean's Award in Bangladesh University of Engineering and Technology for academic results

- Board Scholarships from Board of Secondary and Higher Secondary Education, Dhaka, Bangladesh

Teaching Experiences

- Structured Programming Language (Reference Language: C)

- Object Oriented Programming Language (Reference Language: C++ and Java)

- Data Structures

- Database

- Computer Architecture

- Operating Systems

- Programming Languages and Systems (Graduate Course)

Community Services

- **Program Committee Member**
    - ACM SIGPLAN International Symposium on Memory Management, ISMM 2015
    - International Conference on Networking, Systems and Security, NSysS 2020
    - International Conference on Networking, Systems and Security, NSysS 2021 (TPC Co-Chair)
    - International Conference on Networking, Systems and Security, NSysS 2023 (TPC Co-Chair)