EFFAT FARHANA

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RESEARCH FOCUS

Explainable Artificial Intelligence (XAI), Educational Data Mining, Applied Natural Language Processing (NLP), and Machine Learning.

PROFESSIONAL EXPERIENCE

Postdoctoral Research Scholar **Jul 2021 - Present**
Vanderbilt University *Nashville, TN*
- Analyzing student data in a game-based learning environment for autistic kids.

Graduate Research Assistant (RA) **Aug 2020 - May 2021**
North Carolina State University *Raleigh, NC*
- Mining GitHub repository to understand student behavior in undergraduate Computer Science blended courses.

Graduate Teaching Assistant (TA) **Aug 2016 -Aug 2020**
North Carolina State University *Raleigh, NC*
- TA of Artificial Intelligence, Software Engineering, and Data Structures and Algorithms courses. Reviewed, proctored, and graded assignments and tests to be completed by hundreds of students.

Graduate Research Assistant (RA) **Aug 2015- Aug 2016**
North Carolina State University *Raleigh, NC*
- Designed a rule mining algorithm using Biogeography-based optimization for classification.

Lecturer, Computer Science **Apr 2011 - Dec 2015**
Ahsanullah University of Science and Technology *Dhaka, Bangladesh*
- Instructor of undergraduate classes for introduction to programming, Algorithm Design, and Compiller

EDUCATION

North Carolina State University, Raleigh, NC Aug 2015 - April 2021
Doctor of Philosophy (Ph.D.) in Computer Science
Advisor: Dr. Collin F. Lynch
Dissertation title: Science Reading Behavior of Middle School Students within a Digital Literacy Platform

Bangladesh University of Engineering & Technology, Dhaka, Bangladesh Feb 2011
Bachelor of Science (B.Sc.) in Computer Science and Engineering

VOLUNTEERING

- Volunteered at Graduate Student Orientation 2017 and Doctoral Recruiting Day 2020, NCSU
- Member of Women in Computer Science (WiCS), NCSU

MEMBERSHIP

- ACM Professional Member Membership No.: **4570793**

AWARDS

- Selected as a **Rising Star in Data Science- Jan 2021** organised by Center for Data and Computing (CDAC), University of Chicago.
- Travel award to attend Women in Machine Learning (WiML) workshop, co-located with NeurIPS 2020 (virtual).
- Awarded scholarship by Women in Computer Science (WiCS), NCSU to attend Grace Hopper Conference, 2018
- Awarded scholarship by ACM Richard Tapia Celebration of Diversity in Computing, 2020 to present poster in ACM Student Research Competition

SERVICE

- Sub-reviewer at EDM 2021
- Shadow PC at Mining Software Repository (MSR), 2021 Conference

SELECTED PUBLICATIONS

Educational Data Mining

1. **Effat Farhana**, Teomara Rutherford, and Collin F. Lynch. 2020. Understanding Reading Behaviors of Middle School Students. In Proceedings of the Seventh ACM Conference on Learning @ Scale (L@S '20). pp. 385–388.
2. **Effat Farhana**, Teomara Rutherford, and Collin F. Lynch. 2020. Associations Between Self-Regulated Learning Strategies and Science Assignment Score in a Digital Literacy Platform. In *Proceedings of the International Conference of the Learning Sciences (ICLS 2020)*.
3. **Effat Farhana**, Teomara Rutherford, and Collin F. Lynch. 2020. Investigating Relations between Self-Regulated Reading Behaviors and Science Question Difficulty. In *Proceedings of the 13th International Conference on Educational Data Mining (EDM 2020)*.
4. **Effat Farhana**, Maaz Saleem Kapadia, Wenjia Cao, and Collin F. Lynch. Predicting Post College STEM Enrollment from Middle School Clickstream Data. In *Workshop on Scientific Findings from the ASSISTments Longitudinal Data Competition: Educational Data Mining (EDM) 2018*.

Explainable Artificial Intelligence (XAI) and Information Retrieval

1. **Effat Farhana**, Teomara Rutherford, and Collin F. Lynch. 2022. Predictive Student Modelling in an Online Reading Platform. In the Twelfth AAAI Symposium on Educational Advances in Artificial Intelligence (EAAI-2022, Collocated with AAAI-22) (In Press).
2. **Effat Farhana** and Steffen Heber. 2017. Biogeography-based rule mining for classification. In Proceedings of the Genetic and Evolutionary Computation Conference (GECCO '17). pp. 417–424.
3. Samuel Ebert, **Effat Farhana**, and Steffen Heber. 2018. A parallel island model for biogeography-based classification rule mining in Julia. In *Proceedings of the Genetic and Evolutionary Computation Conference Companion (GECCO '18). pp. 1284–1291.*
4. **Effat Farhana**, and M. Sohel Rahman. Constrained sequence analysis algorithms in computational biology. In *Information Sciences 295 (2015): 247-257.*
5. **Effat Farhana**, and M. Sohel Rahman. Doubly-constrained LCS and hybrid-constrained LCS problems revisited. In *Information Processing Letters 112.13 (2012): 562-565.*

Software Engineering/ Mining Software Repositories

1. Akond Rahman, **Effat Farhana**, Chris Parnin, and Laurie Williams. Gang of eight: A defect taxonomy for infrastructure as code scripts. In *Proceedings of the 42nd International Conference on Software Engineering, ICSE, vol. 20. 2020.*
2. Akond Rahman, **Effat Farhana** and Laurie Williams.. The 'as code' activities: development anti-patterns for infrastructure as code. In *Empir Software Eng 25, 3430–3467 (2020).*
3. **Effat Farhana**, Nasif Imtiaz and Akond Rahman, Synthesizing Program Execution Time Discrepancies in Julia Used for Scientific Software. In *2019 IEEE International Conference on Software Maintenance and Evolution (ICSME), Cleveland, OH, USA, 2019, pp. 496-500, doi: 10.1109/ICSME.2019.00083.*
4. Nasif Imtiaz, Akond Rahman, **Effat Farhana** and L. Williams, Challenges with Responding to Static Analysis Tool Alerts. *2019 IEEE/ACM 16th International Conference on Mining Software Repositories (MSR), Montreal, QC, Canada, 2019, pp. 245-249*