Jaydeb Sarker

Ph.D. Candidate in Computer Science, Wayne State University
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Research Interests

Software Engineering (SE), Human Aspects of Software Engineering, Natural Language Processing, Empirical Software Engineering, Code Review, Software Developers Interaction, Open Source Software, Deep Learning, Transformer Models, Explainability of AI

Education

Wayne State University Detroit, MI
Ph.D. Candidate in Computer Science, GPA: 3.92/4.0 *August 2019 – Winter 2024(Expected)*

Dissertation Title: Identification and Mitigation of Toxic Communications Among Open Source Software Developers
Advisor: Dr. Amiangshu Bosu

Wayne State University Detroit, MI
Masters in Computer Science, GPA: 3.90/4.0 *August 2019 – August 2022*

Rajshahi University of Engineering and Technology Rajshahi, Bangladesh
BSc. in Computer Science and Engineering, CGPA: 3.71/4.0 *January 2012 – October 2016*

Experiences

Graduate Teaching Assistant August 2019 – August 2022, May 2023 - Present
Wayne State University *Detroit, MI*

Thomas C Rumble Graduate Fellow August 2022 – May 2023
Wayne State University *Detroit, MI*

Lecturer January 2017 – July 2019
University of Information Technology and Sciences *Dhaka, Bangladesh*

Research Internship September 2017- November 2017
Otto-Von-Guericke-Universität *Magdeburg, Germany*

Publications

Journal Paper

J1. [**TOSEM-23**] **Jaydeb Sarker**, Asif Kamal Turzo, Ming Dong, and Amiangshu Bosu. Automated identification of toxic code reviews using toxicr. *ACM Transactions on Software Engineering and Methodology (TOSEM)*, 32(5), july 2023. Accepted for presentation in Journal First Track of The ACM Joint European Software Engineering Conference and Symposium on the Foundations of Software Engineering (ESEC/FSE)-2023, San Francisco, California, United States.

Peer Reviewed Conference Papers

C1. [**ESEM-23**] **Jaydeb Sarker**, Sayma Sultana, Steven R. Wilson, and Amiangshu Bosu. Toxispanse: An explainable toxicity detection in code review comments. In *Proceedings of the 17th ACM/IEEE International Symposium on Empirical Software Engineering and Measurement (ESEM), Technical Track, New Orleans, Louisiana, United States*, page TBD, October, 2023. **Acceptance Rate: 29%.**

C2. [**ESEM-23**] Asif Kamal Turzo, Fahim Faysal, Ovi Poddar, **Jaydeb Sarker**, Anindya Iqbal, and Amiangshu Bosu. Towards automated classification of code review feedback to support analytics. In *Proceedings of the 17th ACM/IEEE International Symposium on Empirical Software Engineering and Measurement (ESEM), Technical Track, New Orleans, Louisiana, United States*, page TBD, October, 2023. **Acceptance Rate: 29%.**

C3. [**APSEC-20**] **Jaydeb Sarker**, Asif Kamal Turzo, and Amiangshu Bosu. A benchmark study of the contemporary toxicity detectors on software engineering interactions. In *2020 27th Asia-Pacific Software Engineering Conference (APSEC)*, pages 218–227. IEEE, 2020. **Acceptance Rate: 37%.**

Short Papers

SP1 [**ASE-22**] **Jaydeb Sarker**. 'who built this crap?' developing a software engineering domain specific toxicity detector. *Student Research Competition on the International Conference on Automated Software Engineering (ASE), Rochester, MI, USA*, pages 1–3, 2022.

SP2 [**ASE-22**] **Jaydeb Sarker**. Identification and mitigation of toxic communications among open source software developers. *Doctoral Symposium on the International Conference on Automated Software Engineering (ASE), Rochester, MI, USA*, pages 1–5, 2022.

SP3 [**ESEM-21**] Sayma Sultana, **Jaydeb Sarker**, and Amiangshu Bosu. A rubric to identify misogynistic and sexist texts from software developer communications. In *Proceedings of the 15th ACM/IEEE International Symposium on Empirical Software Engineering and Measurement (ESEM)*, pages 1–6, 2021.

Honors and Awards

- NSF Travel Award for attending ESEM-2023
- SIGSOFT CAPS award for attending ESEM-2023
- NSF Travel Award for attending Midwest PL Summit 2023
- Thomas C. Rumble University Graduate Fellowship for 2022-23 Academic Year, Wayne State University
- Deutscher Akademischer Austauschdienst (DAAD) scholarship, Germany- 2017
- Technical scholarship in RUET for the outstanding results from 2012 to 2016.

Reviewing/Professional Activities

Journal Reviewer

1. Software Quality Journal: 2022-Present

Conference Committee

1. International Conference on Software Engineering(ICSE) 2024, Artifact Evaluation Track
2. Software Analysis, Evolution and Reengineering (SANER) 2024, Tool Demo Track
3. Junior PC Member at the Mining Software Repositories Conference (MSR) 2023
4. MSR 2021 Shadow Program Committee member
5. Additional Reviewers within the ICSE 2021- Tool Demonstrations Track

Talks/Presentation

1. Presented poster: "Mitigation of Toxic Communications Among Open Source Software Developers" at Midwest PL Summit 2023, University of Michigan, Ann Arbor, USA.
2. Presentation of "An Automated Tool to Identify Toxic Comments During Software Developers Communication" at Graduated Research Symposium 2023, Wayne State University, Detroit, MI, USA.

Teaching

Wayne State University, MI, USA

Course/Lab Instructor

- CSC 4110 - Software Engineering Lab: Winter 2021, Summer 2021, Winter 2022, Summer 2022, Fall 2023
- CSC 4110 - Software Engineering Lecture: Summer 2022
- CSC 4420 - Computer Operating Systems (Theory+Lab) - Summer 2023
- CSC 1100 - Introduction to Problem Solving and Programming Lab: Fall 2019, Winter 2020, Summer 2020, Fall 2020
- CSC 1101- Introduction to Problem Solving and Programming Lecture: Summer 2020

Teaching Assistant

- BE1500: Introduction to Programming and Computation for Engineers

University of Information Technology and Sciences, Dhaka, Bangladesh

Instructor

- C Programming, Data Structure, Algorithms, Software Engineering (January 2017-July 2019)

Technical Skills

Programming: Python, Java, C, C++, SQL, MATLAB
NLP and ML: Classification, Deep Neural Models, Transformers, BERT, RoBERTa, XLNet, Token Level Text Classification, Huggingface Transformers, Explainability of Transformers
Statistical Analysis:: Empirical Analysis of Software Engineering, Regression Modeling, Bootstrapping in Regression
Tools: Jupyter Notebook, Scikit Learn, Keras, Tensorflow, Pytorch
Others: Analytical Problem Solving, Algorithms, Agile method in SE, Git, Linux
Certifications: CCNA Routing and Switching

Developed Software/Tools for SE Research

ToxiCR | *Python, Tensorflow* [GitHub]

- A supervised learning-based tool to identify toxic code review comments
- A descent toxicity detector for SE domain
- BERT-base model achieved an 89% F1-score and outperformed other SOTA toxicity detectors

ToxiSpanSE | *Python, Tensorflow, PyTorch* [GitHub]

- An Explainable toxicity detector for code review comments
- First token-based toxicity detector for the SE domain
- RoBERTa model achieved 88% F1 score for toxic class tokens

Conference Volunteer Experience

1. 37th IEEE/ACM International Conference on Automated Software Engineering (ASE) 2022, Oakland Center, Michigan.
2. Worked as a Student Volunteer in the 44th ICSE-2022, In person Conference at Pittsburg, PA, USA.
3. Student Volunteer in the ASE 2021, Virtual (Original: Melbourne, Australia).
4. Worked as a Student Volunteer in the 43th ICSE-2021, Virtual Conference (Original: Madrid, Spain).

Outreach Programs and Extra Curricular Activities

- Lead Instructor of Summer Camp program at Wayne State University, 2022 (worked with 4-12 grade students)
- Coach of Analytical Programming Contest Team-2018, UITS, Dhaka, Bangladesh

References

Available upon request

October 6, 2023