

Jaydeb Sarker

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

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RESEARCH INTERESTS

Natural Language Processing, Software Engineering (SE), Human Aspects of SE, Deep Learning, Explainability of ML

EDUCATION

Wayne State University

Ph.D. Candidate in Computer Science, GPA: 3.92/4.0

Detroit, MI

August 2019 – April 2024 (Expected)

Wayne State University

Masters in Computer Science, GPA: 3.90/4.0

Detroit, MI

August 2019 – August 2022

Rajshahi University of Engineering and Technology

BSc. in Computer Science and Engineering, CGPA: 3.71/4.0 (Position: 7th/56)

Rajshahi, Bangladesh

January 2012 – October 2016

EXPERIENCES

Graduate Teaching Assistant

Wayne State University

August 2019 – August 2022, May 2023 - Present

Detroit, MI

Thomas C Rumble Graduate Fellow

Wayne State University

August 2022 – May 2023

Detroit, MI

Lecturer

University of Information Technology and Sciences

January 2017 – July 2019

Dhaka, Bangladesh

Internship on 5G wireless communication

Otto-Von-Guericke-Universität

Sept 2017- Nov 2017

Magdeburg, Germany

PUBLICATIONS

Journal Paper

- J1. 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)*, feb 2023. Accepted

Peer Reviewed Conference Papers

- C1. 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, Technical Track, ESEM, 2023*
- C2. 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, Technical Track, ESEM, 2023*

- C3. 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.
- C4. 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.
- C5. 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.
- C6. 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.

HONORS AND AWARDS

- SIGSOFT CAPS award for attending ESEM-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

1. Member of the program committee (Junior PC- reviewer) at the 2023 Mining Software Repositories Conference
2. Reviewer of Software Quality Journal 2022
3. Reviewer in MSR 2021 Shadow Program Committee member
4. Additional Reviewers within the ICSE 2021- Tool Demonstrations-track

TEACHING

- CSC 4420 - Computer Operating Systems (Theory+Lab) - Summer 2023
- CSC 4110 - Software Engineering Lecture: Summer 2022
- CSC 4110 - Software Engineering Lab: Winter 2021, Summer 2021, Winter 2022, Summer 2022
- 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

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 36th IEEE/ACM International Conference on Automated Software Engineering (ASE) 2021, Virtual (Original: Melbourne, Australia).
4. Worked as a Student Volunteer in the 43th ICSE-2021, Virtual Conference (Original: Madrid, Spain).

ANALYTICAL PROBLEM SOLVING

- Solved 150+ problems in Leetcode, UVA and LightOj online judges.
- Participated in programming contest in “RUET CSE-2012”, participated ACM-ICPC preliminary contest in Dhaka Region-2014.

REFERENCES

Dr. Amiangshu Bosu,
Assistant Professor, Department of Computer Science
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