

# Jaydeb Sarker

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

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## RESEARCH INTERESTS

Software Engineering, Empirical Software Engineering, Human Aspects of Software Engineering, Natural Language Processing, Human-Computer Interaction, Deep Learning, Explainability of ML

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## EDUCATION

### Wayne State University

Detroit, MI

*Ph.D. Candidate in Computer Science, GPA: 3.93/4.0*

*August 2019 – April 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*

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## 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*

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## PUBLICATIONS

### Journal Paper

- J1. [TOSEM-23] Jaydeb Sarker, Asif Kamal Turzo, Ming Dong, and Amiangshu Bosu. Automated identification of toxic code reviews using toxier. *ACM Transactions on Software Engineering and Methodology (TOSEM)*, 32(5), july 2023 **Impact Factor: 4.4**.

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. Tox-ispanse: An explainable toxicity detection in code review comments. In *2023 ACM/IEEE International Symposium on Empirical Software Engineering and Measurement (ESEM)*, pages 1–12. IEEE, 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 *2023 ACM/IEEE International Symposium on Empirical Software Engineering and Measurement (ESEM)*, pages 1–12. IEEE, 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.

## Under Review (Full Paper)

1. Sayma Sultana, **Jaydeb Sarker**, Farjzana Israt, Paul Rajshakhar, and Amiangshu Bosu. Automated identification of sexual orientation and gender identity discriminatory texts from issue comments. In *Review at the ACM Transactions on Software Engineering and Methodology*, page TBD, 2024

## HONORS AND AWARDS

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- SIGSOFT CAPS award for attending FSE-2023, ESEM-2023
- NSF Travel 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 (9-month fellowship with full tuition fee waiver), Wayne State University
- Deutscher Akademischer Austauschdienst (DAAD) scholarship, Germany- 2017
- Technical scholarship in RUET for the outstanding results from 2012 to 2016.

### **Journal Reviewer**

1. Software Quality Journal: 2022-Present
2. e-Informatica Software Engineering Journal: 2024-Present

### **Conference Program Committee/Reviewer**

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

### **Student Volunteers**

1. 37th IEEE/ACM ASE 2022, In-person Conference at Oakland Center, Michigan.
2. 44th ICSE-2022, In-person Conference at Pittsburg, PA, USA.
3. 36th IEEE/ACM ASE 2021, Virtual (Original: Melbourne, Australia).
4. 43th ICSE-2021, Virtual Conference (Original: Madrid, Spain).

### **TALKS/PRESENTATION**

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1. Automated Identification of Toxic Code Reviews Using ToxiCR at ESEC/FSE-2023, San Francisco, CA, USA.
2. ToxiSpanSE: An explainable toxicity detection in code review comments at ESEM-2023, New Orleans, Louisiana, USA.
3. “Mitigation of Toxic Communications Among Open Source Software Developers” at Midwest PL Summit 2023, University of Michigan, Ann Arbor, USA.
4. “An Automated Tool to Identify Toxic Comments During Software Developers Communication” at Graduated Research Symposium 2023, Wayne State University, Detroit, MI, USA.
5. Identification and Mitigation of Toxic Communications Among Open Source Software Developers ASE-2022, Michigan, USA.
6. Benchmark study of the contemporary toxicity detectors on software engineering interactions, APSEC-2020, Singapore (Virtual).

## TEACHING

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### Wayne State University, MI, USA

#### Course/Lab Instructor

- CSC 4110 - Software Engineering Lab: Winter 2021, Summer 2021, Winter 2022, Summer 2022, Fall 2023, Winter 2024
- 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

- BE 1500: 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)

## DEVELOPED SOFTWARE/TOOLS FOR SE RESEARCH

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#### **ToxiCR** | *Python, Tensorflow* [GitHub]

- BERT-base model achieved an 89% F1-score and outperformed other SOTA toxicity detectors

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

- RoBERTa model achieved 88% F1 score for toxic class tokens

## RESEARCH AND TECHNICAL SKILLS

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**Programming:** Python, Java, C, C++, SQL, MATLAB, Java Script

**Statistical Data Analysis:** Empirical Analysis of Software Engineering, Regression Modeling, Bootstrapping in Regression, Qualitative Analysis

**NLP and ML:** Classification, Deep Neural Models, Transformers, BERT, RoBERTa, XLNet, Token Level Text Classification, Huggingface Transformers, Explainability of Transformers

## OUTREACH PROGRAMS AND EXTRA CURRICULAR ACTIVITIES

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- 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

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Available upon request

*March 4, 2024*