SAIKAT MONDAL

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CAREER OBJECTIVES

My career goals include – (1) conducting leading-edge, influential, and impactful research at the **intersection of Explainable, Trustworthy Artificial Intelligence and Software Engineering**, consistently tackling **robust, relevant, and emerging challenges** in these dynamic fields, (2) promoting innovative AI-driven solutions that empower progress–ensuring they are **novel, affordable, efficient, and sustainable**, (3) honing my expertise in **research, development, teaching, and supervision** by embracing continuous learning, fostering inter- and multi-disciplinary collaborations, and engaging in extensive self-reflection to stay at the forefront of AI and software engineering advancements. Additionally, I am committed to promoting **equity, diversity, and inclusion (EDI)**, ensuring my research and teaching are inclusive, accessible, and supportive of all backgrounds.

EDUCATION

Doctor of Philosophy, Computer Science/Software Engineering
University of Saskatchewan, Canada
May 2020 – November 2025 (Expected)
Course Average: **93.50%**
Advisor: Prof. Dr. Chanchal K. Roy
Awards: **IEEE TCSE Distinguished Paper Award (SANER 2025)** + **BSAUS Research Excellence Award 2025** + **Distinguished Research Award (ICSAC 2025)** + **Carl McCrosky Innovation Scholarship 2023** + **Dr. Keith Geddes Award 2022** + **GSA Research Excellence in STEM Award 2022** + **Citizenship Award 2021** + **Best Paper Award (ISEC 2022)** + **SOAR Distinguished Research Award 2024** + Vanier Canada Graduate Scholarship 2021 (Nomination)

Master of Science, Computer Science/Software Engineering
University of Saskatchewan, Canada
May 2018 – April 2020
Course Average: **92.00%**
Thesis: Investigating the Quality Aspects of Crowd-Sourced Developer Forum: A Case Study of Stack Overflow
Advisor: Prof. Dr. Chanchal K. Roy
Awards: **University of Saskatchewan Graduate Thesis Award 2020** + **Research Excellence Award 2020 (CS)** + **Dr. Keith Geddes Award 2020**

PUBLICATIONS

—— Journals ——

[8] **Saikat Mondal**, and B. Roy, *"Reproducibility of Issues Reported in Stack Overflow Questions: Challenges, Impact & Estimation"*. Journal of Systems & Software (**JSS**), pp. 17. (Impact Factor = **3.7**), 2024.

[7] **Saikat Mondal**, G. Uddin, and C. K. Roy, *"Automatic Prediction of Rejected Edits in Stack Overflow*". Empirical Software Engineering Journal (**EMSE**), pp. 46. (Impact Factor = **4.5**), 2022. (**ICSE 2023** Journal First Track)(Selected as the **weekly top** article in the Artificial Intelligence category in Doctor Penguin)

[6] **Saikat Mondal**, M. M. Rahman, C. K. Roy, and K. Schneider, *"The Reproducibility of Programming-Related Issues in Stack Overflow Questions*". Empirical Software Engineering Journal (**EMSE**), pp. 59. (Impact Factor = **4.5**), 2021

[5] **Saikat Mondal**, G. Uddin, and C. K. Roy, *"Automatic Assistance for Rollback Edit Inconsistencies in Stack Overflow*". Automated Software Engineering Journal, pp. 49. (Under Minor Revision)

[4] J. Das, **Saikat Mondal**, and C. K. Roy, *"Developers' Engagement and Perceptions of ChatGPT in GitHub Issue Resolution: A Mixed-Methods Study*". Empirical Software Engineering Journal (**EMSE**) (Under Revision)

[3] S. T. Cynthia, **Saikat Mondal**, and B. Roy, *"Question Submission Guideline Violations on Developer Q&A Forums: A Multi-Perspective Study*". Empirical Software Engineering Journal (**EMSE**) (Under Revision)

[2] M. Raihan, S. Azam, L. Akter, M. Hassan, R. Quadir, A. Karim, **Saikat Mondal**, A. More, *"Risk Factors Categorizations of Ischemic Heart Disease in South-Western Bangladesh*". Data Intelligence, pp. 35. (Impact Factor = **1.3**), 2024

[1] A.K. Bairagi, **Saikat Mondal** and D. Chakroborti, *"Securing Bangla Text Communication Using Image Steganography with Dynamic Substitution in IoT Environment"*, Khulna University Studies (KUS) Journal, pp. 19, 2017.

—— Conferences ——

[30] **Saikat Mondal**, C. K. Roy, H. Wang, J. Arguello, and S. Mathan, *"Can We Trust the AI Pair Programmer? Copilot for API Misuse Detection and Correction*". International Conference on Collaborative Advances in Software and COmputing (CASCON 2025) (Accepted)

[29] A. Muttakin, **Saikat Mondal**, and C. K. Roy, *"The State of Open Science in Software Engineering Research: A Case Study of ICSE Artifacts"*. International Conference on Software Engineering (**ICSE 2026**) (*Under Major Review*)

[28] P. Nowshin, **Saikat Mondal**, D. Mondal, and C. K. Roy, *"Policies for LLM-Assisted Bug Fixing: Practitioners' Concerns, Disclosure, Oversight, and Organizational Equilibria"*. International Conference on the Foundations of Software Engineering (FSE 2026) (Under Review)

[27] S. D. Bappon **Saikat Mondal**, C. K. Roy, and K. Schneider, *"Human-Aligned Enhancement of Programming Answers with LLMs Guided by User Feedback"*. International Conference on Mining Software Repositories (**MSR 2026**) (*Under Review*)

[26] S. R. Dipto, **Saikat Mondal**, and C. K. Roy, *"Algorithm-Based Pipeline for Reliable and Intent-Preserving Code Translation with LLMs"*. International Conference on Program Comprehension (**ICPC 2026**) (*Under Review*)

[25] **Saikat Mondal**, and C. K. Roy, *"Does Editing Improve Answer Quality on Stack Overflow? A Data-Driven Investigation"*. International Conference on Software Maintenance and Evolution (**ICSME 2025**) (**Distinguished Research Award at ICSAC 2025**) (*To appear*)

[24] S. Roy, **Saikat Mondal**, B. Roy, and C. K. Roy, and C. K. Roy, *"From Questions to Insights: Exploring XAI Challenges Reported on Stack Overflow Questions"*. International Conference on Evaluation and Assessment in Software Engineering (**EASE 2025**) (*To appear*)

[23] **Saikat Mondal**, and C. K. Roy, *"GENCNIPPET: Automated Generation of Code Snippets for Supporting Programming Questions"*. International Conference on Mining Software Repositories (**MSR 2025**

RR Track) (*To appear*) (After MSR-RR acceptance, the work is invited and under preparation for submission to **EMSE** journal.)

[22] J. Das **Saikat Mondal**, and C. K. Roy, *"Why Do Developers Engage with ChatGPT in Issue-Tracker? Investigating Usage and Reliance on ChatGPT-Generated Code"*. International Conference on Software Analysis, Evolution and Reengineering (**SANER 2025**) (*To appear*) **(IEEE TCSE Distinguished Paper Award)** (Received **EMSE** special issue invitation)

[21] S. T. Cynthia, **Saikat Mondal**, J. Das, and B. Roy, *"Gender Disparities in Contributions, Leadership, and Collaboration: An Exploratory Study on Software Systems Research"*. 6th Workshop on Gender Equality, Diversity, and Inclusion in Software Engineering (**GE@ICSE 2025**) (*To appear*)

[20] S. D. Bappon **Saikat Mondal**, B. Roy, *"AUTOGENICS: Automated Generation of Context-Aware Inline Comments for Code Snippets on Programming Q&A Sites Using LLM* (**SCAM 2024**), Flagstaff, AZ, USA, October 2024.

[19] **Saikat Mondal**, M. M. Rahman and C. K. Roy, *"Can We Identify Stack Overflow Questions Requiring Code Snippets? Investigating the Cause & Effect of Missing Code Snippets"*. International Conference on Software Analysis, Evolution and Reengineering (**SANER 2024**), pp. 12, Rovaniemi, Finland, March 2024. (**SOAR Distinguished Research Award** 2024)

[18] **Saikat Mondal**, S. D. Bappon and C. K. Roy, *"Enhancing User Interaction in ChatGPT: Characterizing and Consolidating Multiple Prompts for Issue Resolution"*. 21st International Conference on Mining Software Repositories (**MSR 2024**), pp. 5, Lisbon, Portugal, April 2024.

[17] J. Das **Saikat Mondal**, and C. K. Roy, *"Investigating the Utility of ChatGPT in the Issue Tracking System: An Exploratory Study"*. 21st International Conference on Mining Software Repositories (**MSR 2024**), pp. 5, Lisbon, Portugal, April 2024.

[16] **Saikat Mondal**, M. M. Rahman and C. K. Roy, *"Do Subjectivity and Objectivity Always Agree? A Case Study with Stack Overflow Questions*". 20th International Conference on Mining Software Repositories (**MSR 2023**), pp. 13, Melbourne, Australia, May 2023.

[15] **Saikat Mondal**, D. Mondal and C. Roy, *"Investigating Technology Usage Span by Analyzing Users' Q&A Traces in Stack Overflow*". 30th Asia-Pacific Software Engineering Conference (**APSEC 2023**), Seoul, Korea, December 2023.

[14] **Saikat Mondal**, and B. Roy, *"Reproducibility Challenges and Their Impacts on Technical Q&A Websites: The Practitioners' Perspectives"*. ACM 15th Innovations in Software Engineering Conference (ISEC 2022), pp. 11, DA-IICT Gandhinagar, India, February 2022. (ISEC 2022 **Best Paper** Award)

[13] S. Roy, G. Laberge, B. Roy, F. Khomh, A. Nikanjam and **Saikat Mondal**, *"Why Don't XAI Techniques Agree? Characterizing the Disagreements Between Post-hoc Explanations of Defect Predictions"*. International Conference on Software Maintenance and Evolution (**ICSME 2022** NIER track), pp. 5, Limassol, Cyprus, October 2022.

[12] **Saikat Mondal**, G. Uddin and C. K. Roy, *"Rollback Edit Inconsistencies in Developer Forum"*. 18th International Conference on Mining Software Repositories (**MSR 2021**), pp. 12, Madrid, Spain, May 2021.

[11] **Saikat Mondal**, C M K. Saifullah, A. Bhattacharjee, M. M. Rahman, and C. K. Roy, *"Early Detection and Guidelines to Improve Unanswered Questions on Stack Overflow*". ACM 14th Innovation in Software Engineering Conference (ISEC 2021), pp. 11, Bhubaneswar, India, February 2021

[10] **Saikat Mondal**, G. Uddin and C. K. Roy, *"Automatic Identification of Rollback Edit with Reasons in Stack Overflow Q&A Site*". In Proceeding of the 36th IEEE International Conference on Software Maintenance and Evolution (**ICSME 2020** RR Track), Adelaide, Australia, September 2020.

[9] **Saikat Mondal**, M. M. Rahman and C. K. Roy, *"Can Issues Reported at Stack Overflow Questions be Reproduced? An Exploratory Study*". In Proceeding of the IEEE 16th International Conference on Mining Software Repositories (**MSR 2019**), pp. 479-489, Montreal, Canada, May 2019. (**People's Choice Award**)

[8] M. Raihan, P.K. Mandal, M. M. Islam, T. Hossain, P. Ghosh, S.A. Shaj, A. Anik, M. R. Chowdhury, **Saikat Mondal**, and A. More, *"Risk Prediction of Ischemic Heart Disease Using Artificial Neural Network"*. In Proceeding of the International Conference on Electrical, Computer and Communication Engineering (ECCE 2019), pp. 1-5, Bangladesh, February 2019

[7] M. Raihan, M. M. Islam, P. Ghosh, S.A. Shaj, M. R. Chowdhury, **Saikat Mondal** and A. More, *"A Comprehensive Analysis on Risk Prediction of Acute Coronary Syndrome Using Machine Learning*

Approaches". In Proceeding of the 21st International Conference of Computer and Information Technology (ICCIT 2018), pp. 1-6, IEEE, Dhaka, Bangladesh, December 2018

[6] P. Nag, **Saikat Mondal**, F. Ahmed, A. More and M. Raihan, *"A Simple Acute Myocardial Infarction (Heart Attack) Prediction System Using Clinical Data and Data Mining Techniques"*. In Proceedings of 20th International Conference of Computer and Information Technology (ICCIT 2017), pp. 1-6, Dhaka, Bangladesh, December 2017

[5] M. Raihan, **Saikat Mondal**, A. More, M. O. F. Sagor, G. Sikder, M. A. Majumder, M. A. A. Manjur and K. Ghosh, *"Smartphone Based Ischemic Heart Disease (Heart Attack) Risk Prediction using Clinical Data and Data Mining Approaches, a Prototype Design"*. In Proceedings of the 19th International Conference on Computer and Information Technology (ICCIT 2016), pp. 299-303, Dhaka, Bangladesh, December 2016.

[4] **Saikat Mondal**, R. Debnath and B.K. Mondal, *"An Improved Color Image Steganography Technique in Spatial Domain"*. In Proceedings of the 9th International Conference on Electrical and Computer Engineering (ICECE 2016), pp. 582-585, Dhaka, Bangladesh, December 2016.

[3] A.K Bairagi, **Saikat Mondal** and R. Debnath, *"A Robust RGB Channel Based Image Steganography Technique using a Secret Key"*. In Proceedings of the 16th International Conference on Computer and Information Technology (ICCIT 2013), pp. 81-87, Khulna, Bangladesh, March 2014

[2] A. K. Bairagi, **Saikat Mondal** and A. K. Mondal, *"A Dynamic Approach in Substitution Based Audio Steganography"*. In Proceedings of the International Conference on Informatics, Electronics & Vision (ICIEV 2012), pp. 501-504, Dhaka, Bangladesh, May 2012

[1] M.S. Rahman, **Saikat Mondal**, S. K. Ghosh and M. M. Rahman, *"A New Approach of Extendable Multicast Routing Protocol in MANET"*. In Proceedings of the 13th International Conference on Computer and Information Technology (ICCIT 2010), pp. 120-124, Dhaka, Bangladesh, December 2010

AWARDS AND ACHIEVEMENTS

[2025] IEEE TCSE Distinguished Paper Award (SANER 2025): Awarded at the International Conference on Software Analysis, Evolution, and Reengineering (**SANER, A category**), a premier venue in Software Engineering that focuses on the theory and practice of extracting and recovering information from existing software systems.

[2025] Distinguished Research Award (2nd Runner-up) 2025: Awarded at the 9th Symposium on Innovations in Computer Science and Applied Computing (ICSAC 2025). Award value: $300.

[2024] SOAR Distinguished Research Award 2024: Awarded to the top six outstanding research presentations at the SOAR Symposium 2024, held in conjunction with the 8th Symposium on Innovations in Computer Science and Applied Computing (ICSAC 2024). Award value: $300.

[2024] Carl McCrosky Innovation Scholarship 2023: Awarded to *only one* student by the Department of Computer Science, University of Saskatchewan, for innovative problem-solving and outstanding academic performance. Award value: $1,500.

[2023] Dr. Keith Geddes Award 2022 – Ph.D. (Student of the Year): Awarded to *only one* Ph.D. student by the Department of Computer Science, University of Saskatchewan, for outstanding research and academic performance in the ongoing **Ph.D.** program. Award value: $2,500.

[2022] GSA Research Excellence in STEM Award 2022: Awarded to *only one* student from the University of Saskatchewan for the outstanding contribution to Science, Technology, Engineering, and Mathematics (STEM), active research collaborations, popularity in the research community and exceptional leadership skills.

[2022] Citizenship Award 2021: Awarded by the Department of Computer Science in recognition of exceptional academic and leadership skills, exemplary contributions to organizing events on campus, and engaging in voluntary works that have added to the quality and reputation of the department.

[2022] Dr. Keith Geddes Award Nomination 2021 – Ph.D.: Nominated by the Department of Computer Science, University of Saskatchewan, for outstanding research and academic performance in the ongoing **Ph.D.** program.

[2022] Carl McCrosky Innovation Scholarship Nomination 2021: Nominated by the Department of Computer Science, University of Saskatchewan, for innovative research and academic performance in the ongoing **Ph.D.** program.

[2022] ISEC 2022 Best Paper Award: Awarded by the 15th Innovations in Software Engineering Conference (ISEC 2022) for the paper *"Reproducibility Challenges and Their Impacts on Technical Q&A Websites: The Practitioners' Perspectives"*.

[2021] 2020 University of Saskatchewan Graduate Thesis Award (University-wide best M.Sc. Thesis Award): Awarded to *only one* M.Sc. student by the University of Saskatchewan for the best M.Sc. thesis in the area of Physical and Engineering Science. To the best of my knowledge, this is likely the first time in over 50 years that a computer science student has achieved this honor. Award value: $500.

[2021] 2020 Research Excellence Award (Best M.Sc. Thesis Award): Awarded to *only one* M.Sc. student by the Department of Computer Science, University of Saskatchewan, for outstanding research and academic performance in the **M.Sc.** level.

[2021] Vanier Canada Graduate Scholarship Nomination: Nominated by the Department of Computer Science, University of Saskatchewan, for exceptional leadership skills and extraordinary research and academic performance.

[2021] People's Choice Award: Awarded by the Computer Science and Bioinformatics Symposium of the University of Saskatchewan for the poster *"The Reproducibility of Programming-Related Issues in Stack Overflow Questions"*.

[2020] Dr. Keith Geddes Award 2019 – M.Sc. (Student of the Year): Awarded to *only one* M.Sc. student by the Department of Computer Science, University of Saskatchewan, for outstanding research and academic performance in the ongoing **M.Sc.** program. Award value: $2,500.

[2020] Dean's Scholarship: Nominated by the Department of Computer Science of the University of Saskatchewan for outstanding research and academic performance.

[2019] Dr. Keith Geddes Award 2018 Nomination: Nominated by the Department of Computer Science, University of Saskatchewan, for outstanding research and academic performance in the ongoing **M.Sc.** program.

[2023] Graduate Travel Award: Awarded by the University of Saskatchewan for ICSE 2023 travel to Melbourne, Australia. Award value: $550.

[2020] Graduate Travel Award: Awarded by the Bangladesh-Sweden Trust Fund to support my travel from Bangladesh to Canada for graduate studies.

[2019] Graduate Travel Award: Awarded by the University of Saskatchewan for MSR 2019 travel to Montreal, Canada. Award value: $350.

[2015] Best Faculty Award: In recognition of outstanding contributions and dedication to academic achievement in Computer Science and Engineering Discipline, School of Science, Engineering and Technology, Khulna University, Bangladesh.

[2014] Outstanding Service Award: Awarded by the 16th International Conference on Computer and Information Technology (ICCIT 2013), Bangladesh, to recognize my outstanding contributions and dedication for successfully organizing the renowned conference on Information Technology (IT).

[2012] Icon of the Month Award (Best Employee): Awarded by Samsung R&D Institute Bangladesh to recognize the outstanding contribution in research and development projects towards the progress of the company.

[2012] Exceptional Engineer Award: Awarded by Samsung R&D Institute Bangladesh to recognize the excellent community contribution on behalf of the company. During my time at Samsung R&D Institute Bangladesh Ltd, I volunteered with CAFFE (a UK-based charity offering free vocational training to young individuals). Within one year, I was able to teach computer skills to eleven street children in Dhaka, enabling them to earn money to support their living expenses.

[2001] Best Student Award 2020: Awarded by the Member of Parliament (MP), Khulna-1, Bangladesh, for obtaining the highest marks among around 5K students who attended the Secondary School Certificate (SSC) exam from Khulna-1 in the year 2000. Award Value: 10K BDT

[2006] Math Olympiad Award: Awarded by Khulna University, Bangladesh, for being a *champion* in the Math Olympiad.

[2008] Programming Contest Award: Awarded by Khulna University, Bangladesh, for being the *first runner-up* in the programming contest.

[2000] Champion and Best Speaker Awards: Our debate group became a champion, and I was awarded as the best speaker in the inter-school debate competition organized by Rupantar, Batiaghata, Khulna, Bangladesh.

[1990–2002] Cultural Awards: I won a number of awards for being top in cultural competitions (e.g., debate, poetry recitation, speech, and acting).

TEACHING EXPERIENCE

Over the last 13 years, I have taught a diverse range of courses, designed inclusive curricula and assignments, and evaluated student performance across three universities, guided by a teaching philosophy that values accessibility, practical relevance, and the success of learners from diverse backgrounds.

University of Saskatchewan

Instructor & Lead Coordinator, CMPT 470/816: Advanced Software Engineering (Winter 2025)

- Designed inclusive, employment-focused curriculum for final-year undergraduate and graduate students, aligned with industry and applied learning standards.
- Delivered lectures and practical sessions on: Data & Software Analytics, AI and Software Engineering, Trustworthy and Responsible AI, Modern SE Practices (e.g., LCNC, cloud-native), Software Change Management, Software Development Process & DevOps, Software Process Automation, and Software Quality.
- Implemented diverse assessment methods such as quizzes, coding tasks, peer reviews, and project presentations, emphasizing business-focused AI tools and responsible machine learning practices.
- Supervised the following six undergraduate research groups (18 students in total), guiding them through idea conceptualization, project methodology, experiment design, data analysis (qualitative and quantitative), and report review.

  – Leveraging GitHub Copilot for API Misuse Detection in Real-time Code Development (*Mentored students: Juan Arguello, Hong Wang, and Samantha Mathan*)

  – Leveraging Large Language Models and Historical Patterns for Efficient Automated Program Repair (*Mentored students: Babafunmise Adebowale, Pallavi, and Wahhaj Javed*)

  – Characterizing Feature Requests on Meta Stack Overflow: Insights into Community-Driven Platform Evolution (*Mentored students: Anurag Khare, Samein Dorazahi, and Omar Sadek*)

  – Decoding Feature Importance: Unveiling ML Model Learning Strategies with Explainable AI (*Mentored students: Jay S. Patel, Karanpreet S. Bansal, and Saeed Ahmed*)

  – LLMs Incorrectness Detection in Git Merge Issues (*Mentored students: David Baik, Hudson Sundbo, and Ibrahim Touqani*)

  – Can Large Language Models Mitigate Challenges in Reproducing Issues Reported in Stack Overflow Questions? An Exploratory Study (*Mentored students: Daniel Ibekwe, Kristian Manaloto, and Ali Udi*)

  These studies are now being prepared for submission to suitable Software Engineering venues. I also mentored two graduate students on their individual research-based projects.
- Integrated industry-relevant practices to prepare students for employment, including collaborative projects, agile methods, and Git-based workflows.
- Emphasized ethical issues, practical applicability of AI APIs, Business intelligence, and data-driven decision making in both lectures and projects.

Assignment Designer & Evaluator, CMPT 470/816 (Winter 2024)

- Developed and evaluated practical assignments focused on Python for AI, data mining, and software automation topics

Project Mentor & Evaluator, CMPT 370: Intermediate Software Engineering (Winter 2022)

- Supervised and assessed four project teams (16 students) on intermediate Software Engineering concepts and implementation.
- Provided ongoing feedback and guidance to promote teamwork, version control, and iterative design.

Teaching Assistant & Grader (2018–2023)

- Graded assignments and provided instructional support for the following courses: CMPT 141: Introduction to Computer Science, CMPT 214: Programming Principles and Practice, and CMPT 280: Intermediate Data Structures and Algorithms

The detailed syllabus of these courses can be found at **University of Saskatchewan website**.

Khulna University

- Taught multiple undergraduate-level Computer Science courses across foundational and advanced topics.
- Responsible for full instructional duties, including: Designing curriculum and course content, Delivering lectures and lab sessions, Creating questionnaires and exams, and Conducting evaluations and publishing final grades.
- Supervised software development projects and (co-)supervised seven undergraduate theses. In our Computer Science and Engineering Department, students have the option to conduct their thesis individually or in a group of two. They primarily worked on **Information Security** (Image & Audio Steganography) and **Biomedical Research (Heart Diseases Prediction)** using Machine learning techniques. Two of their undergraduate thesis paper were published in ICCIT 2016 and ICCIT 2017.

  Supervised Students: Tasmim Riza, Rufaida Kabir Zarin, M. Raihan, Omar Faruqe Sagor, Palash Sarker, Sk Arman, Mahadi Hasan Rakib, Mahdi Hussain, Mohoshin Ara Tahera, Anika Das, Farjana Yeasmin, Saumitra Bagchi, Shahirul Kabir Sami
- **Courses Taught:** Software Development Project (CSE 2200) • Artificial Intelligence & Laboratory (CSE 4205 & CSE 4206) • Structured Programming (CSE 1103) • Compiler Design & Laboratory (CSE 4105 & CSE 4106) • Algorithms (CSE 2201) • Object Oriented Programming (CSE 1201) • Pattern Recognition (CSE 4221) • Web Programming Project (CSE 3200) • Data Structure & Algorithms (CSE 2151) • Computer Programming (CSE 1151)

The detailed syllabus of these courses can be found at the **website of Khulna University**.

North Western University

- Taught several undergraduate-level Computer Science courses as a part-time faculty.
- Responsibilities included: Delivering lectures and labs, designing questionnaires and conducting exams, evaluating student performance, and publishing grades.
- Supervised student software development projects as part of sessional courses.
- **Courses Taught:** Software Development Project/Sessional • Computer Graphics and Pattern Recognition (CSE 4301) • Computer Graphics and Pattern Recognition Lab (CSE 4302) • Compiler Design (CSE 3207) • Compiler Design Lab (CSE 3208)

Details can be found at the **North Western University website**.

EMPLOYMENT HISTORY

Graduate Teaching Assistant

September 2018–Current University of Saskatchewan, Canada

I was appointed as a Graduate Research and Teaching Assistant in the Department of Computer Science in 2018. My responsibilities include teaching (undergraduate/graduate) courses, conducting research and development, mentoring and evaluating student projects, and contributing to curriculum design, assignment development, and grading for undergraduate courses.

Internship

March 2025–Current NeuroAI, Canada

As part of my internship at NeuroAI, I am contributing to the BRIDGES Engage program, an AI-driven tool that provides automated, context-aware support to parents of children with special needs. BRIDGES Engage is the family-facing component of NeuroAI's broader solution, offering personalized intervention strategies, educational resources, and real-time Q&A through its AI assistant.

My work focuses on building intuitive conversational flows and embedding large language models (LLMs)

that can interpret parent queries, respond with empathetic, evidence-based guidance, and surface relevant resources aligned with each child's unique development profile. This aligns with NeuroAI's mission to "bridge the gap in neurodevelopmental care" by empowering families with timely, tailored support and reducing the burden of waitlists and fragmented clinical information.

Assistant Professor

July 2015–May 2018 Khulna University, Bangladesh

Appointed as a lecturer and later promoted to Assistant Professor in the Department of Computer Science and Engineering at Khulna University. I was accounted for (1) teaching undergraduate classes, curricular innovation, course planning, course evaluation, conducting exams and publishing grades, (2) conducting research, (co-)supervising undergrad theses, (3) conducting academic projects, organizing student contests, organizing project festivals, leading students in the regional/national level contests, (4) managing department's computer club, library, website and (5) conducting administrative affairs such as admission test management, departmental purchase inspection, and various other official decision makings.

Assistant Director of Students' Affairs

December 2012–April 2016 Khulna University, Bangladesh

I was appointed as an Assistant Director of Students' Affairs (in addition to a faculty member) at Khulna University. I accounted for (1) university students' welfare, (2) organizing cultural events and festivals, (3) celebrating national days, (4) advising cultural organizations of the university, and (5) promoting the law and order of the university.

Lecturer

May 2012–July 2015 Khulna University, Bangladesh

Appointed as a full-time faculty member in the Department of Computer Science and Engineering, Khulna University. I was accounted for (1) teaching undergraduate classes, curricular innovation, course planning, course evaluation, conducting exams and publishing grades, (2) conducting research, (3) conducting academic projects, organizing student contests, organizing project festivals, leading students in the regional/national level contests, (4) managing department's computer club, library, website and (5) conducting administrative affairs such as admission test management, departmental purchase inspection, and various other official decision makings. I was awarded the **Best Faculty Award** from my Department among 12+ faculty members.

Adjunct Faculty

May 2012–May 2018 North Western University, Bangladesh

Appointed as a part-time faculty member in the Department of Computer Science and Engineering, North Western University, Bangladesh. I was responsible for (1) teaching undergraduate and diploma engineers' classes, course evaluation, conducting exams, and publishing grades, and (2) supervising academic projects.

Software Engineer

November 2010–May 2012 Advanced Research and Development (Currently, Solution Lab), Samsung R&D Institute Bangladesh Ltd.

I was appointed as a software engineer and got the opportunity to work under the advanced R&D division (currently, solution lab) due to my outstanding research and development skills. I was responsible for (1) solving research problems, developing software (application & system) and reporting project updates, (2) exposing novel research ideas on wireless connectivity, and writing research proposals. I was awarded the **Icon of the Month Award** among 50+ employees and the annual **Exceptional Engineer Award** among 400+ employees.

Research Advisor

February 2023–December 2024 DreamOnline Limited, Bangladesh

I was appointed as a Research Advisor at DreamOnline Limited, Bangladesh, in 2023. My sole responsibility was to work with the company's AI team and guide them in developing automated tools and techniques that support developers in producing high-quality software.

Research Assistant

August 2015–May 2018 Rural Health Progress Trust, Maharashtra, India

I was responsible for (1) conducting research on detecting heart diseases by analyzing clinical data, (2) collecting data from online applications & heart camping and processing them, and (3) supervising the research team.

ACADEMIC EXCELLENCE

I have always been committed to academic excellence throughout my academic career, as shown below.

Ph.D. Courses

I took two courses during my Ph.D. in Computer Science at the University of Saskatchewan and scored an average of **93.50%**. These courses involved multiple assignments, paper reviews, presentations, a term project, a term final exam, and a term paper. The papers of my term projects were published in **APSEC 2023** and **ISEC 2022** (received the **best paper** award). ISEC 2022 paper received a special issue invitation from **JSS** and was accepted for publication.

– **CMPT 898:** Human-Driven Software Engineering for Scientific Research (**94.00%**)

– **CMPT 824:** Graph Drawing and Network Visualization (**93.00%**)

M.Sc. Courses

I took four during my Masters in Computer Science at the University of Saskatchewan and scored an average of **92.00%**. These courses involved multiple assignments, paper reviews, presentations, a term project, and a term paper. Three papers of my term projects were published in **MSR 2019**, **MSR 2021**, **ISEC 2021**, and **MSR 2023** and thus, they were included in my thesis due to their high quality.

– **CMPT 846:** Software Maintenance & Evolution (**93.00%**)

– **ISEC 2021** Advanced Software Engineering (**93.00%**)

– **CMPT 856:** Topics in Software Engineering (**93.00%**)

– **CMPT 820:** Topics in Learning and Intelligent Systems (**89.00%**)

The detailed syllabus of these courses can be found at the **website** of the University of Saskatchewan.

Undergraduate-Level Courses

A total of **160** credits were completed during the four years of my Bachelor of Computer Science and Engineering at Khulna University. In my class, I **scored the highest CGPA** among 35 students.

Other Courses

– **Quantum Computing:** Completed a one-month course on Quantum Computing organized by Centre for Development of Advanced Computing (C-DAC) in collaboration with the Indian Institute of Technology, Roorkee, supported by the Ministry of Electronics and Information Technology, Government of India. This transformative program provided deep insights into: (a) Qubits, Superposition, and Entanglement, (b) Quantum Gates and Circuits, (c) Quantum Algorithms and Simulation, and (d) Real-world applications of Quantum Computing.

RESEARCH

I investigated several crucial quality aspects (e.g., reproducibility, consistency, diversity) of crowd-sourced developer forums such as Stack Overflow. These forums curate invaluable programming knowledge or practices and disseminate them among millions of software developers every day. In essence, these online resources have the potential to save millions of dollars in software debugging and technical troubleshooting every year. Considering the immense importance of the quality of the vast knowledge base, I have been developing intelligent tools and techniques to support (a) these programming Q&A websites to manage their content better and (b) the users to search for relevant, high-quality content effectively. My research not only focuses on the technical aspects but also on various community aspects (e.g., voting, communications, diversity) to ensure a high-quality programming knowledge base that promotes equity, diversity, inclusion, and accessibility. Thus, my research has the potential to significantly improve a global

programming knowledge base such as the Stack Overflow Q&A website, which has been and will play a major role in modern software development.
Building on this foundation, my current studies focus on the transformative role of large language models (LLMs) in software engineering. While LLMs such as ChatGPT, Gemini, MetaAI, DeepSeek, and others show immense promise in automating development tasks, **my goal is not only automation but also collaboration. I aim to fuse the power of AI with human expertise to provide trustworthy, explainable, and context-aware support**. Rather than replacing developers, I envision LLMs as intelligent companions that empower developers with meaningful insights and validated solutions, thereby amplifying collaborative problem-solving. A key part of this vision is maintaining a rich learning ecosystem that encourages diverse solution paths and deeper understanding. **My goal is to build systems that developers not only use but trust, learn from, and rely on to create robust, inclusive, and sustainable software.**

Selected Ph.D. Research Projects

I have been working on the following research projects as a part of my Ph.D. courses and research work. Papers produced from these projects have been accepted/published/submitted at the highly selective peer-reviewed conferences of Software Engineering, such as **ICSE, ASE, ICSME, MSR, EASE, ESEM, and SANER**, and at the top-ranked journals such as **EMSE** and **JSS**.

[1] **[2024-2025] SafeSnippet**: Developed `SafeSnippet`, a browser-integrated tool leveraging GPT-4.1 and Retrieval-Augmented Generation (RAG) to detect and fix security vulnerabilities (CWEs) in noisy, (non-)parsable Python code from Stack Overflow. Conducted a comprehensive evaluation of 20 state-of-the-art LLMs, showing RAG improved F1 scores by up to 155.2%. GPT-4.1 and Qwen-2.5-Coder-32B achieved the highest CWE-fix rates. This study offers the first empirical foundation for LLM-based CWE analysis on real-world community code. *Technology & Concepts:* Empirical study, qualitative analysis, LLMs (without and with RAG), real-world evaluation.

[2] **[2024-] GENCNIPPET: Automated Generation of Code Snippets for Supporting Programming Questions:** Many question submitters on Stack Overflow are unable to include required example code snippets due to various challenges: 29.7% of users lack the necessary code, 45.3% face employer restrictions, 45.3% are concerned about sharing confidential information, 42.2% are pressed for time, and 51.6% are unsure which parts of the code to include. To address this, we propose `GENCNIPPET`, a tool powered by LLM that integrates with Stack Overflow's question submission system. `GENCNIPPET` will automatically generate relevant code examples when needed, ensuring questions are better supported and can receive timely solutions. *Technology & Concepts:* Data preprocessing, fine-tuning of LLM models, manual and automated quality evaluation, user study. (**MSR 2025** RR track, after MSR-RR acceptance, the work is invited and under preparation for submission to the **EMSE** journal.)

[3] **[2024-2025] Empirical Study on the Impact of Edits in Stack Overflow Answers:** Conducted a large-scale analysis of 94,994 edited Python answers on Stack Overflow to assess how accepted edits affect key quality dimensions—semantic relevance, usability, complexity, security, optimization, and readability. Findings reveal inconsistent outcomes: while 53.3% of edits improve relevance and 51.0% enhance performance, many edits degrade quality by introducing security vulnerabilities (20.5%), increasing complexity (32.3%), or reducing readability (49.7%). The study informs best practices for collaborative editing and content moderation in technical Q&A platforms. *Technology & Concepts:* Data preprocessing, empirical study, automated quality evaluation. (Accepted in **ICSME 2025**)

[4] **[2024-] Exploring Variations in Code Quality: From Newcomers to Trusted Contributors:** This study examines the variation in answer code quality on Stack Overflow across user types categorized by reputation. We analyze critical quality aspects, such as readability, usability, vulnerabilities, maintainability, and complexity, to determine whether engagement with Q&A forums promotes learning and leads to the production of higher-quality code. Our findings offer insights into the evolution of coding practices among community members. *Technology & Concepts:* Data preprocessing, empirical study, automated code quality evaluation, static code analysis. (One manuscript is being prepared to submit to the **TSE** journal.

[5] **[2020-2022] EditEx** (Edit Expert): This study introduced a tool that supports identifying rejected edits with the potential reasons automatically. `EditEx` works with the Stack Overflow edit system and assists users during real-time editing. *Technology & Concepts:* Empirical study, qualitative analysis, user study, natural language processing, Machine Learning (ML) and rule-based classifier, cognitive workload using NASA TLX. (Phase-I was accepted and published in **ICSME 2020** RR track, and Phase-II was ac-

cepted and published in **EMSE**). `EditEx` installation tutorial can be found on a YouTube video

[6] **[2021-2022] iEdit** (Inconsistent Edit): This study enhances *Rollback Edit Inconsistencies Detector (MSR 2021)* and investigates inconsistencies in rejected edits. It introduced an online tool, `iEdit`, to detect inconsistent edits automatically. It works with the Stack Overflow editing system and guides editors with valuable suggestions on inconsistent content, with its rejection ratio. *Technology & Concepts:* Empirical study, qualitative and quantitative analysis, Machine Learning models, rule-based detection, client-server technology. (Under *Major* Revision in **Automated Software Engineering** journal)

[7] **[2022-2024] Identification of Questions that Need Code Snippets:** Stack Overflow questions often discuss programming-related problems that require example code snippets to understand and resolve the problems. However, users often miss including code snippets with questions (whenever required) during their submission, which prevents them from receiving appropriate solutions. Thus, this study attempts to identify the questions that need code snippets to answer appropriately. *Technology & Concepts:* Empirical study, qualitative and quantitative analysis, discourse analysis, concept mining, Machine Learning models. (**SANER 2024**)

[8] **[2024-] Answer Finder for Unanswered Questions:** In Stack Overflow, about 30% of 24 million questions did not receive any answers. However, our preliminary investigation found that an internet-scale advanced search based on syntax & semantic similarity of the text & code of the questions could find relevant/partially relevant solutions to the problem reported in the questions. Furthermore, we intend to investigate the capabilities of LLMs (such as ChatGPT and Gemini) to generate responses to unanswered questions. Our goal is to provide an additional answers database to supplement Stack Overflow's current data dump if we receive satisfactory responses to these inquiries. *Technology & Concepts:* Context-aware web search, syntax & semantic similarity of code & text, meta-search, context-relevance, LLMs, qualitative analysis, user study, ground truth. (Ongoing study)

[9] **[2023-] Support OSS Projects By Identifying Erroneous/Buggy/Low-Quality Code Snippets:** Developers often include example code snippets with Stack Overflow questions to explain their programming problems. For example, they can include - (1) an inefficient code snippet and ask for a better code, (2) an erroneous code snippet and ask how to resolve the error, and (3) a sample code snippet to explain a problem clearly. However, similar inefficient or erroneous code can be composed by other developers. Such code degrades software quality, increases vulnerability, and raises maintenance costs. This project attempts to mine the inefficient or buggy code snippets from the Stack Overflow questions. In particular, this study plans to develop machine learning classifiers based on text-based features to identify the questions that contain inefficient/buggy code snippets. This project then looks at these code snippets in Open-Source Software (OSS) projects. This project will employ code clone detection tools (e.g., CCFinder, NiCad) to find similar code snippets in the OSS projects. The primary hypothesis is that the quality of any OSS project containing more inefficient/buggy code clones is low. However, this study will suggest developers better/bug-free code snippets from Stack Overflow answers. *Technology & Concepts:* Empirical study, qualitative and quantitative analysis, clone detection tool, Machine Learning models. (Ongoing study)

[10] **[2021-] Issue Reproducer (✢):** It is an extended version of our earlier work published in **MSR 2019**. The extended version was published in the **EMSE** journal. We are currently investigating the potential of Large Language Models (LLMs) to address reproducibility challenges by enhancing code snippets found in Stack Overflow questions. We plan to introduce an LLM-powered tool designed to promote reproducibility by enhancing the quality and completeness of code snippets on technical Q&A platforms. (Ongoing)

[11] **[2021] Rollback Edit Inconsistencies Detector:** This study enhances an M.Sc. research project. It identifies eight rollback edit inconsistencies and introduces algorithms to detect such inconsistencies automatically. *Technology & Concepts:* Empirical study, qualitative and quantitative analysis, user study, rule-based detection. (one full paper accepted in **MSR 2021**)

[12] **[2020-] Practitioners' Perspectives on Issue Reproducibility Challenges:** Our previous study (MSR 2019) produced a catalogue of potential challenges that hinder the reproducibility of issues reported at Stack Overflow questions. This study attempts to understand developers' perspectives (e.g., agreement, impact) on those challenges by surveying 53 users of Stack Overflow. *Technology & Concepts:* User study, cognitive workload using NASA TLX, Likert scale, open/close coding. (one full paper with *best paper award* in **ISEC 2022**, received special issue invitation from Journal of Systems and Software **(JSS)** and accepted for publication)

[13] **[2020-2022] Technology Usage Stability Miner:** This study attempts to find the technology usage

stability by analyzing the questions answering traces of 21K users of Stack Overflow submitted over eleven years. *Technology & Concepts:* Empirical study, software repository mining, visualization. (**APSEC 2023** – to be appeared soon)

[14] **[2024-] ReproStrength:** This study investigates the Strength of Reproducibility in Machine Learning Models to Predict Unanswered/Unresolved Questions of Stack Overflow. *Technology & Concepts:* Feature extraction & analysis, Machine Learning models, SHAP explainability, quality metrics. (Ongoing study)

Selected M.Sc. Research Projects

I completed the following research projects during my Master in Computer Science at the University of Saskatchewan:

[15] **[2018] Issue-Reproducer:** This study investigates – (1) whether the issues reported in Stack Overflow questions could be reproduced or not, and (2) the correlation between issue producibility status (reproducible/irreproducible) and quality of questions. (one full paper at **MSR 2019**)

[16] **[2019] Unanswered Question Predictor:** This study predicts the potentially unanswered questions in advance during their submission. It offers guidance to question submitters to improve the question so that they receive the appropriate answers in time. (one full paper at **ISEC 2021**)

[17] **[2019] Rollback Edit Reasons and Inconsistencies Detector:** This study investigates the reasons behind rollback edits and how the reasons could be detected automatically. Besides, it expose the inconsistencies of rollback edits and their detection technique. (one full paper at **MSR 2021**, one paper at **ICSME 2020** RR track, **EMSE**)

[18] **[2018-2023] Agreement between Subjectivity and Objectivity:** This study investigates whether the subjective evaluation mechanism of Stack Overflow agrees with the objective measures. (one full paper at **MSR 2023**)

Global Outreach & Research Collaborations

I collaborated with promising researchers from several internationally reputed universities and one institution for several research projects. I led each collaborative project by brainstorming the core ideas, conducting the experiments, and writing the papers. The collaborators helped refine my ideas with professional insights and helped improve the papers with high-quality feedback. My collaborators are as follows:

[2018–] Masud Rahman, Dalhousie University, Canada: We collaborated on *Issue Reproducer* project that produced one full paper at **MSR 2019**, one journal in **EMSE** journal. Then we worked on *Identification of Questions that Need Code Snippets* project that produced one full paper at **SANER 2024**. Now, we are working on the extension of SANER 2024 study.

[2019–] Gias Uddin, York University, Canada: We collaborated on *Rollback Edit Reasons and Inconsistencies Detector* project that produced multiple papers - one full paper at **MSR 2021**, one paper at **ICSME 2020** RR track, one article in **EMSE** journal, and one article is under minor revision in **Automated Software Engineering** journal.

[2022–] Foutse Khomh, Polytechnique Montréal, Canada: We collaborated on a project titled–*Why Don't XAI Techniques Agree?*–which focused on characterizing the disagreements between post-hoc explanations of defect predictions. This work was accepted and published in **ICSME 2022**, and we are currently working on extending it further. Additionally, we conducted another project aimed at identifying the consistency and potential plagiarism in code generated by large language models (LLMs). This study is being prepared to be submitted to **TOSEM**.

[2024–] David Lo, Singapore Management University, Singapore: We are collaborating on two ongoing projects: one focused on answering unanswered questions on Stack Overflow using LLMs, and the other on agent-based automatic program repair. Both projects are currently in the experimental phase, where we are testing and refining our approaches to enhance the effectiveness and efficiency of these solutions.

[2021-] Shohel Ahmed, Islamic University of Technology, Bangladesh: We collaborated on *Readability Challenges of Stack Overflow Code Snippets* project - one full paper is being prepared to submit in a suitable venue.

[2023-] Manishankar Mondal, Khulna University, Bangladesh: We collaborated on *Supporting Quality of Open Source Software Projects Leveraging Crowd Knowledge* project - one full paper is being prepared to submit in a suitable venue.

[2015–2018] Arun More, Rural Health Progress Trust, Latur, India: We collaborated on multiple projects when I was a faculty member at Khulna University that produced multiple papers.

Mentorship/Co-Supervision

I provided mentorship and co-supervised twelve students in Software Research, Interactive Software Engineering, and Visualization, Geometry & Algorithms labs at the University of Saskatchewan. Together, we have published six high-quality peer-reviewed papers, with several others currently under review and in preparation for submission.

[2022-] Saumendu Roy, Ph.D. Candidate

– Why don't XAI techniques agree? Characterizing the disagreements between post-hoc explanations of defect predictions (**ICSME 2022**, extension will be submitted in a suitable venue soon. *Recognition:* SOAR Distinguished Research Award 2022.

– From Questions to Insights: Exploring XAI Challenges Reported on Stack Overflow Questions (**EASE 2025** – *To appear*)

[2023-] Suborno Deb Bappon, M.Sc. Student

– **AUTOGENICS**: Automated Generation of Context-Aware Inline Comments for Code Snippets on Programming Q&A Sites Using LLM Code (**SCAM 2024**). *Recognition:* Best course project.

–**AUTOCOMBAT:** Human-Aligned Enhancement of Programming Answers with LLMs Guided by User Feedback (**MSR 2026** - Under Review)

– **DebtNetX:** A Transformer-based Early Fusion Approach for Detecting Technical Debt in Code Optimization Discussions on Technical Q&A Sites (ready to be submitted in **TOSEM**)

[2023-] Joy Krishan Das, M.Sc. Student

– Investigating the Utility of ChatGPT in the Issue Tracking System: An Exploratory Study (**MSR 2024**)

– Why Do Developers Engage with ChatGPT in Issue-Tracker? Investigating Usage and Reliance on ChatGPT-Generated Code (**SANER 2025**). *Recognition:* **IEEE TCSE Distinguished Paper Award** (Received **EMSE** special issue invitation), Distinguished Research Award (Champion) (ICSAC 2025), SOAR Distinguished Research Award 2024

– Developers' Engagement and Perceptions of ChatGPT in GitHub Issue Resolution: A Mixed-Methods Study (**EMSE** - Under Review)

[2023-] Shamse Tasnim Cynthia, Ph.D. Student

– Gender Disparities in Contributions, Leadership, and Collaboration: An Exploratory Study on Software Systems Research (**GE@ICSE 2025**)

– Question Submission Guideline Violations on Developer Q&A Forums: A Multi-Perspective Study (**EMSE** - Under Review). *Recognition:* SOAR Distinguished Research Award 2024 + SOAR Woman of the Year Research Award 2024 + Winner in Innovations in Computer Science & Applied Computing (ICSAC 2024).

[2023-] Palash Roy & Ajmain Inqiad Alam, Ph.D. Students

– How reliable and usable are the solution codes? A comparative study across Q&A Sites, Code Search Tools, and Code Generators (To be submitted in JSS). *Recognition:* CSAC Research Fest Award 2024 + SOAR Distinguished Research Award 2024

[2022-] Subroto Nag Pinku & Sadman Amin, Siemens, Saskatoon, Canada

– Exploring Code Version Migration Challenges Through the Lens of Neural Analysis (To be submitted in a suitable venue soon)

[2024-] Zoarder Al Muttakin, M.Sc. Student

– The State of Open Science in Software Engineering Research: An Empirical Assessment of ICSE Artifacts (Under Major Revision in **ICSE 2026**)

[2024-] Priata Nowshin, M.Sc. Student
– Policies for LLM-Assisted Bug Fixing: Practitioners' Concerns, Disclosure, Oversight, and Organizational Equilibria **FSE 2026**)
– Insight into Tech Trends to Bridge the Gap: A Global and Gender-Based Mapping of Stack Overflow Profiles (ongoing) *Recognition:* Runner-up, EDI Initiative Workshop 2025, University of Saskatchewan.
– Can LLMs Generate Context-Aware Support Cases for Validating Stack Overflow Answers? An Exploratory Study (ongoing)

[2024-] Tasnova Ahmed, M.Sc. Student
– Do Large Language Models Vary in Accuracy Across Geographic Contexts and Domains? An Exploratory Study (ongoing)

[2025-] Shahriar Rumi Dipto, M.Sc. Student
– Algorithm-Based Pipeline for Reliable and Intent-Preserving Code Translation with LLMs (**ICPC 2026** - Under Review)

Program Committee Member/Reviewer

Serving as a reviewer for several top-tier conferences/journals of Software Engineering.

– **Program Committee Member**: International Conference on Software Analysis, Evolution and Reengineering (SANER 2026 – ERA Track)
– **Junior Program Committee Member**: International Conference on Mining Software Repositories (MSR 2026)
– **Shadow Program Committee Member**: International Conference on Software Engineering (ICSE 2025)
– **Junior Program Committee Member**: International Conference on Mining Software Repositories (MSR 2025)
– **Junior Program Committee Member**: International Conference on Mining Software Repositories (MSR 2024)

Journals
• Transactions on Software Engineering (**TSE**) (Reviewed *Two* journals)
• Empirical Software Engineering (**EMSE**) (Reviewed *Two* journals)
• Transactions on Software Engineering and Methodology (**TOSEM**) (Reviewed *Three* journals)
• Information and Software Technology (**IST**) (Reviewed *One* journal)
• Journal of Systems and Software (**JSS**) (Reviewed *Three* journals)
• Journal of Software - Evolution and Process (Reviewed *One* journal)

Conferences (*sub-reviewer*)
International Conference on Automated Software Engineering (ASE) • International Conference on Software Maintenance and Evolution (ICSME) • International Conference on Software Analysis, Evolution, and Reengineering (SANER) • International Working Conference on Source Code Analysis and Manipulation (SCAM) • International Conference on Program Comprehension (ICPC) • Innovations in Software Engineering Conference (ISEC) • International Conference on Computer Science and Software Engineering (CASCON)

LEADERSHIP & COMMUNITY SERVICES

I served academic, community, and professional organizations and gained experience in **leadership, interpersonal communications, and in executing organizational goals**. To date, I have served in the following leadership positions:

[1] **[2025] Mentor (AI4ALL Summer 2025 Program)**, selected to mentor (two groups, five students) as part of AI4ALL's national initiative to promote the next generation of diverse and responsible AI changemakers. AI4ALL is a nonprofit organization dedicated to transforming the AI talent pipeline by empowering underrepresented communities, particularly Black, Hispanic/Latinx, Indigenous, women,

and non-binary individuals in the U.S., through inclusive education, mentorship, and skill development in responsible AI.

[2] **[2025] Distinguished Reviewer**, 9th Symposium on Innovations in Computer Science and Applied Computing (ICSAC-2025). Contributed to the review process, celebrating innovation and academic excellence in Computer Science and Bioinformatics, facilitating idea exchange and collaboration among researchers and graduate students.

[3] **[2025] Distinguished Judge**, ICSE 2025 Student Poster Competition, served as a distinguished judge for the ACM Student Research Poster Competition at ICSE 2025, held in Ottawa, Canada. Evaluated research posters presented by students, thus contributing to the recognition of outstanding work in software engineering.

[4] **[2022] Lead Organizer**, 6th Symposium on Innovations in Computer Science and Applied Computing (ICSAC) (Research Fest 2022), Computer Science Graduate Council (CSGC), Department of Computer Science, University of Saskatchewan, Canada.

[5] **[2021–2022] President**, Computer Science Graduate Council (CSGC), Department of Computer Science, University of Saskatchewan, Canada.

[6] **[2024] Distinguished Judge**, USSU Undergraduate Symposium 2024, University of Saskatchewan.

[7] **[2023] Distinguished Judge**, SOAR Symposium 2023, University of Saskatchewan.

[8] **[2020–2021] GSA Representative**, Computer Science Graduate Council (CSGC), Department of Computer Science, University of Saskatchewan, Canada.

[9] **[2020–2021] Webmaster**, IEEE Canada North Saskatchewan Chapter.

[10] **[2019–current] Social Chair**, Software Research Lab, Department of Computer Science, University of Saskatchewan, Canada.

[11] **[2021] Program Convener**, Pahela Baishakh & Eid Adda, Khulna University Alumni Association, Canada.

[12] **[2021–2024] Executive Member (elected)**, Khulna University Alumni Association, Canada.

[13] **[2021] Member of Technical Support Team**, SSPP Fund Raising Banquet, Saskatoon, Canada.

[14] **[2019–2020] Vice President Social**, Computer Science Graduate Council (CSGC), Department of Computer Science, University of Saskatchewan, Canada.

[15] **[2012–2016] Assistant Director of Students' Affairs**, Khulna University, Bangladesh.

[16] **[2012–2018] Founder and Director**, Suresh Sreety Shikkha Niketon (An honorary full-free school for the poor children), Batiaghata, Khulna, Bangladesh.

[17] **[2012–2018] Advisor**, Club for Updated Search on Computer (CLUSTER), Khulna University, Bangladesh.

[18] **[2012–2018] Advisor**, Seminar Library, Department of Computer Science, Khulna University, Bangladesh.

[19] **[2014–2018] Mentor**, Bangladesh Association of Software and Information Services (BASIS), Khulna University Chapter.

[20] **[2015–current] Chief Advisor**, Tech For Mankind Bangladesh.

[21] **[2015–2018] Coordinator**, Google Developers Group-GDG Bangla, Khulna University Chapter, Bangladesh.

[22] **[2014–2015] Executive Member (elected)**, Khulna University Teachers' Association, Khulna University, Bangladesh.

[23] **[2012–2015] Program Admin**, Microsoft Developer Network (MSDN) Academic Alliance, Department of Computer Science, Khulna University, Bangladesh.

[24] **[2010–2012] Program Coordinator & Volunteer**, Computers Are Free For Everyone (CAFFE), Dhaka, Bangladesh.

[25] **[2013–2014] Web Chair**, 16th International Conference on Computer and Information Technology-2013 (ICCIT-13), Bangladesh.

[26] **[2013–2014] Web Admin**, Khulna University Web Site, Khulna University, Bangladesh.

[27] **[2012–2018] Programming Contest Coordinator and Coach**, Department of Computer Science, Khulna University, Bangladesh.

[28] **[2012–2015] Sports Coordinator**, Department of Computer Science, Khulna University, Bangladesh.

[29] **[2012–2018] [Principal Coordinator]**, Science and Information Technology Club (SAiTEC), Secondary and Higher Secondary Schools, Batiaghata, Khulna, Bangladesh.

[30] **[2012–2018] Member**, Volunteers of Bangladesh & Poriborton Chai Bangladesh.

Research Talks/Posters/Demonstrations

I attended conferences (physically & virtually) and workshops over the last fifteen years and delivered dozens of research talks on my research topics. Such attendance and talks allowed me (1) to collaborate with the leading researchers from my area, (2) to better communicate my ideas with a large audience, and (3) to stay up-to-date with the hot research trends. The following research talks were produced from my works:

[1] **Saikat Mondal**, and C. K. Roy, *"GENCNIPPET: Automated Generation of Code Snippets for Supporting Programming Questions"*. **MSR 2025**, Ottawa, Ontario, Canada, May 2025.

[2] **Saikat Mondal**, *"Does Editing Improve Answer Quality on Stack Overflow? A Data-Driven Investigation*". ICSAC 2025, Saskatoon, Canada, October 2025

[3] **Saikat Mondal**, S. D. Bappon and C. K. Roy, *"Enhancing User Interaction in ChatGPT: Characterizing and Consolidating Multiple Prompts for Issue Resolution"*. MSR 2024, Lisbon, Portugal, April 2024.

[4] J. Das **Saikat Mondal**, and C. K. Roy, *"Investigating the Utility of ChatGPT in the Issue Tracking System: An Exploratory Study"*. MSR 2024, Lisbon, Portugal, April 2024.

[5] **Saikat Mondal**, *"Transforming Machine Intelligence: From ML to GenAI"*. **Invited Talk – DevFest 2025**, Google Developer Group (GDG), Saskatoon, Canada, Nov 2024.

[6] **Saikat Mondal**, D. Mondal and C. Roy, *"Investigating Technology Usage Span by Analyzing Users' Q&A Traces in Stack Overflow*". **APSEC 2023**, Seoul, Korea, December 2023.

[7] **Saikat Mondal**, G. Uddin, and C. K. Roy, *"Automatic Prediction of Rejected Edits in Stack Overflow*". **ICSE 2023** Journal-First Track, Melbourne, Australia, May 2023.

[8] **Saikat Mondal**, M. M. Rahman and C. K. Roy, *"Do Subjectivity and Objectivity Always Agree? A Case Study with Stack Overflow Questions*". **MSR 2023**, Melbourne, Australia, May 2023.

[9] **Saikat Mondal**, and B. Roy. 2022. *"Reproducibility Challenges and Their Impacts on Technical Q&A Websites: The Practitioners' Perspective"*. ISEC, DA-IICT Gandhinagar, India.

[10] **Saikat Mondal**, G. Uddin and C. K. Roy. 2021 *"Rollback Edit Inconsistencies in Developer Forum"*. MSR, Madrid, Spain.

[11] **Saikat Mondal**, M. M. Rahman, C. K. Roy, and K. Schneider. 2021. *"The Reproducibility of Programming-Related Issues in Stack Overflow Questions"*. University of Saskatchewan, Canada.

[12] **Saikat Mondal**, C M K. Saifullah, A. Bhattacharjee, M. M. Rahman, and C. K. Roy. 2021. *"Early Detection and Guidelines to Improve Unanswered Questions on Stack Overflow*". ISEC 2021, India

[13] **Saikat Mondal**, G. Uddin and C. K. Roy. 2020. *"Automatic Identification of Rollback Edit with Reasons in Stack Overflow Q&A Site*". ICSME 2020, Adelaide, Australia

[14] **Saikat Mondal**, M. M. Rahman and C. K. Roy. 2019 *"Can Issues Reported at Stack Overflow Questions be Reproduced? An Exploratory Study*". MSR 2019, Montreal, Canada

[15] M. Raihan, **Saikat Mondal**, A. More, M. O. F. Sagor, G. Sikder, M. A. Majumder, M. A. A. Manjur and K. Ghosh. 2016. *"Smartphone-Based Ischemic Heart Disease (Heart Attack) Risk Prediction using Clinical Data and Data Mining Approaches, a Prototype Design"*. ICCIT, Bangladesh

[16] **Saikat Mondal**, R. Debnath and B.K. Mondal. 2016. *"An Improved Color Image Steganography Technique in Spatial Domain"*. ICECE 2016, Dhaka, Bangladesh, 2016

[17] **Saikat Mondal**. 2015. *"Innovations for Service"*. **Invited Talk**, Divisional ICT Fair, Ministry of ICT, Bangladesh

[18] A.K Bairagi, **Saikat Mondal** and R. Debnath. 2014. *"A Robust RGB Channel Based Image Steganography Technique using a Secret Key"*. ICCIT 2014, Khulna, Bangladesh

[19] **Saikat Mondal**. *"PHP for Software Development"*. **Invited Talk**, Google Developers Group (GDG) Bangla, Khulna University Chapter, Bangladesh, 2014.

[20] M.S. Rahman, **Saikat Mondal**, S. K. Ghosh and M. M. Rahman, *"A New Approach of Extendable Multicast Routing Protocol in MANET"*. ICCIT 2010, Dhaka, Bangladesh

Professional Projects

Conducted several research-based projects while working in Samsung R&D Institute Bangladesh and won the Icon of the Month award. I also completed several research and development projects while I was a faculty in Khulna University, Bangladesh.

– **Protein Fold Classification Using Machine Learning Technique**, Research Cell, Khulna University, Bangladesh

IPC Mailbox System for VxWorks, Connectivity Division, Samsung R&D Institute Bangladesh

– **DSP Software Development for Camera and Channel – Phase I and II**, Samsung Reconfigurable Processor Division, Samsung R&D Institute Bangladesh

– **Spyder Wi-Fi Display**, Connectivity Division, Samsung Bangladesh R&D Center Ltd

– **Home Entertainment WLAN SOC Host Software Development**, Connectivity Division, Samsung R&D Institute Bangladesh

– **Khulna University (www.ku.ac.bd) and ICCIT 2013 (www.iccit.org.bd/2013) Website (Design and Development)**, Khulna University, Bangladesh

GRANTS & SCHOLARSHIPS

[2025] NSERC - Canada Postdoctoral Research Award program and it is under review. Value $70,000 per year for two years.

[2024-2025] Borealis AI Fellowship: Applied for the 2024-2025 Borealis AI Fellowship and it is under review. Fellowship amount: $10,000.

[2024-2025] Faculty Scholarship & Graduate Teaching Fellowship: Awarded by the Department of Computer Science, the University of Saskatchewan, for the Ph.D. program. Scholarship amount: $24,500/year for 1 year.

[2023-2024] Faculty Scholarship & Graduate Teaching Fellowship: Awarded by the Department of Computer Science, the University of Saskatchewan, for the Ph.D. program. Scholarship amount: $24,500/year for 1 year.

[2022-2023] Faculty Scholarship: Awarded by the Department of Computer Science, University of Saskatchewan, for research excellence in the ongoing Ph.D. program as top-ups. Scholarship amount: ≈ $3,000.

[2022-2023] Faculty Scholarship & Graduate Teaching Fellowship: Awarded by the Department of Computer Science, the University of Saskatchewan, for the Ph.D. program. Scholarship amount: $24,500/year for 1 year.

[2021-2022] Faculty Scholarship & Graduate Teaching Fellowship: Awarded by the Department of Computer Science, the University of Saskatchewan, for the Ph.D. program. Scholarship amount: $24,500/year for 1 year.

[2021] GSA Bursary: Awarded by the Graduate Students' Association (GSA), University of Saskatchewan, for financial need, good community involvement, and strong academic performance. Scholarship amount: $750.

[2021] Faculty Scholarship: Awarded by the Department of Computer Science, University of Saskatchewan for the research excellence in the ongoing Ph.D. program as top ups. Scholarship amount: ≈ $2,500.

[2020-2021] Faculty Scholarship & Graduate Teaching Fellowship: Awarded by the Department of Computer Science, the University of Saskatchewan, for the Ph.D. program. Scholarship amount: $24,500/year for 1 year.

[2020] Faculty Scholarship & Graduate Teaching Fellowship: Awarded by the Department of Computer Science, University of Saskatchewan for the Ph.D. program. Scholarship amount: $1,333/month for 4 months.

[2019-2020] Faculty Scholarship: Awarded by the Department of Computer Science, University of Saskatchewan, for research excellence in the ongoing M.Sc. program as top-ups. Scholarship amount: ≈ $8,000.

[2019] GSA Bursary: Awarded by the Graduate Students' Association (GSA), University of Saskatchewan, for financial need, good community involvement, and strong academic performance. Scholarship amount: $1,000.

[2018-2020] Faculty Scholarship & Graduate Teaching Fellowship: Awarded by the Department of Computer Science, the University of Saskatchewan, for the M.Sc. program. Scholarship amount: $20,000/year for 2 years.

[2018] Khulna University Research Grant: Awarded by Khulna University Research Cell, Bangladesh, for research excellence when I was an assistant professor of Khulna University. Grant amount: ≈ $1,000.

[2005–2010] Merit List Scholarship: Awarded by Khulna University, Bangladesh, from 2005 to 2010 for academic excellence in the B.Sc. program.

[2000–2002] Merit List Scholarship: Awarded by Government Education Board (Jessore) from 2000 to 2002 for excellence in the 2000 SSC exam.

TRAINING

I conducted the following training on research, teaching, mental health well-being and software engineering:

– **Mental Health First Aid**, University o Saskatchewan (supported by the Mental Health Commission of Canada), Canada.

– **Teaching Pedagogy (Induction, Module I and II)**, Center of Excellence in Teaching and Learning and Institutional Quality Assurance Cell, Khulna University, Bangladesh.

– **Teaching Methodology**, Research Cell, Khulna University, Bangladesh.

– **Research Methodology**, Higher Education Quality Enhancement Project, Economics Discipline, Khulna University, Bangladesh.

– **Child Rights**, Save the Children, Bangladesh.

– **Mobile Application Development**, Ministry of Information & Communication Technology (MoICT), Bangladesh.

– **Process Engineering**, Samsung R&D Institute Bangladesh.

Research Tools & Technology Experience

[1] **Software Development & Maintenance:** Eclipse, Jupyter Notebook, NetBeans, PyCharm, Code::Blocks, IntelliJ, Visual Studio, JUnit, JavaParser, Jsoup, PMD, FindBugs, Roslyn, Esprima and Maven.

[2] **Software Version Control:** Git, GitHub.

[3] **Machine Learning & Data Mining:** Scikit-Learn, WEKA, R, MATLAB, Decision Trees (CART), Random Forest, XGBoost, ANN, KNN, SVM, Logistic Regression, Naive Bayes, Linear Regression, Re-sampling, SMOTE, Bagging, Boosting, SHAP, LIME, and Ensemble Learning.

[4] **Code Search & Information Retrieval:** Lucene.

[5] **Natural Language Processing:** Stanford CoreNLP, Mallet, ROUGE, POS tagging, Sentiment analysis, Analysis/SentiStrength SE, SEntiMoji, Term weighting, Text summarization, Discourse Analysis, and Semantic similarity analysis.

[6] **Source Code Analysis:** AST, Syntax similarity, Readability, Understandability, and Complexity analysis.

[7] **Statistics & Data Modeling:** Probability distributions, Random sampling, Confidence interval, Central tendency, Data centrality, and Statistical significance tests.

[8] **Reporting & Prototyping:** LaTeX, Adobe Photoshop, MS Office, and Pencil.

[9] **Programming Languages:** Java, Python and C/C++.

[10] **Research Collaboration:** Overleaf, Slack, MS team, WhatsApp.

[11] **Data Visualization:** Gephi, OGDF.

PROFESSIONAL REFERENCES

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