

Mohammed Latif Siddiq

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[GitHub](#) | [LinkedIn](#) | [Google Scholar](#) | [Researchgate](#)

EXECUTIVE SUMMERY

- Software engineering researcher with three years of hands-on experience developing and conducting research in the intersection of software security and applied machine learning.
- Industry-level software engineering experience developing enterprise and machine learning-based software.

EDUCATION

University of Notre Dame, USA Ph.D. in Computer Science and Engineering Department of Computer Science and Engineering	January 2022 - Present CGPA: 3.50/4.00
Bangladesh University of Engineering and Technology, Bangladesh Bachelor of Science in Computer Science and Engineering Department of Computer Science and Engineering	February 2016 - February 2021 CGPA: 3.46/4.00

PROFESSIONAL EXPERIENCES

University of Notre Dame, IN, USA <i>Graduate Research Assistant</i> <ul style="list-style-type: none">• Working in the intersection of language models, their application, and security.• Published eight peer-reviewed research papers.	January, 2023 - Present
Cummins Inc., IN, USA <i>Data Scientist Co-op</i> <ul style="list-style-type: none">• Worked on building a question-answering pipeline using large language models.• Tech stack: Python, Langchain, Gradio, and Databricks platform.	June, 2023 - August, 2023
University of Notre Dame, IN, USA <i>Graduate Teaching Assistant</i> <ul style="list-style-type: none">• Spring 2022: CSE 30321 Computer Architecture• Fall 2022: CSE 30332 Programming Paradigms	January, 2022 - December, 2022
REVE Systems, Dhaka, Bangladesh <i>Junior Software Engineer</i> <ul style="list-style-type: none">• Developing enterprise software for Bangladesh Parliament Secretariat.• Tech stack: Java servlet, JSP and MySQL.	March, 2021 - November, 2021

GRANTS & SCHOLARSHIPS

Travel Grants, NSF ICSE 2024 Travel Awards, 2024

1,938\$ grants to participate in ICSE 2024 in-person and Student Mentoring Workshop in Lisbon, Portugal with a 30% acceptance rate.

Travel Grants, ACM SIGSOFT Travel Grants, 2023

1,200\$ grants to participate in ICSE 2023 in-person and Student Mentoring Workshop in Melbourne, Australia with a 50% acceptance rate.

Travel Grants, Bangladesh Sweden Trust Fund, 2022 - 2023

100\$ grants for one-way plane fare to attend USA school with financial funding.

Travel Grants, NSF ICSE 2022 Travel Awards, 2022

1,075\$ grants to participate in ICSE 2022 in-person and Student Mentoring Workshop along with complimentary registration for the conference.

Research Assistantship, University of Notre Dame, 2022 - 2027

Tuition scholarship including health insurance, and bimonthly stipends.

Technical Scholarship, Bangladesh, 2016 - 2020

Complimentary government scholarship for regular engineering students.

Government Scholarship, Bangladesh, 2016 - 2020

Awarded For Outstanding Performance in Higher School Certificate Examination.

Government Scholarship, Bangladesh, 2011 - 2012

Awarded For Outstanding Performance in Junior School Certificate Examination.

PEER REVIEWED PUBLICATIONS

28th **International Conference on Evaluation and Assessment in Software Engineering (EASE)** 2024
Using Large Language Models to Generate JUnit Tests: An Empirical Study, **Mohammed Latif Siddiq**,
Joanna C. S. Santos, Ridwanul Hasan Tanvir, Noshin Ulfat, Fahmid Al Rifat, and Vinicius Carvalho Lopes

32nd **IEEE/ACM International Conference on Program Comprehension (ICPC)** 2024
*Understanding Regular Expression Denial of Service (ReDoS): Insights from LLM-Generated Regexes and
Developer Forums*, **Mohammed Latif Siddiq***, Jiahao Zhang*, and Joanna C. S. Santos (*Equal
contribution)

22nd **IEEE International Working Conference on Source Code Analysis and Manipulation (SCAM)** 2022
An Empirical Study of Code Smells in Transformer-based Code Generation Techniques, **Mohammed Latif
Siddiq**, Shafayat Hossain Majumder, Maisha Rahman Mim, Sourov Jajodia, and Joanna C. S. Santos

28th **IEEE International Conference on Software Analysis, Evolution and Re-engineering (SANER)** 2021
SQLIFIX: Learning Based Approach to Fix SQL Injection Vulnerabilities in Source Code, **Mohammed Latif
Siddiq***, Md. Rezwanur Rahman Jahin*, Mohammad Rafid Ul Islam, Rifat Shahriyar, and Anindya Iqbal
(*Equal contribution)

PEER REVIEWED SPECIAL TRACK AND WORKSHOP PUBLICATIONS

21st **International Conference on Mining Software Repositories, Mining Challenge Track** 2024
Quality Assessment of ChatGPT Generated Code and their Use by Developers, **Mohammed Latif Siddiq**,
Lindsay Roney, Jiahao Zhang, and Joanna C. S. Santos

46th **International Conference on Software Engineering, New Ideas and Emerging Results Track** 2024
Re(gEx|DoS)Eval: Evaluating Generated Regular Expressions and their Proneness to DoS Attacks,
Mohammed Latif Siddiq, Jiahao Zhang, Lindsay Roney, and Joanna C. S. Santos

2nd **International Workshop on Natural Language-based Software Engineering** 2023
Zero-shot Prompting for Code Complexity Prediction Using GitHub Copilot, **Mohammed Latif Siddiq**,
Abdus Samee, Sk Ruhul Azgor, Md. Asif Haider, Shehabul Islam Sawraz, and Joanna C. S. Santos

1st **International Workshop on Mining Software Repositories Applications for Privacy and Security** 2022
*SecurityEval Dataset: Mining Vulnerability Examples to Evaluate Machine Learning-Based Code Generation
Techniques*, **Mohammed Latif Siddiq**, and Joanna C. S. Santos

1st **International Workshop on Natural Language-based Software Engineering** 2022
BERT-Based GitHub Issue Report Classification, **Mohammed Latif Siddiq**, and Joanna C. S. Santos

OTHER PUBLICATIONS

ArXiv Preprint 2024
Quality Assessment of Prompts Used in Code Generation (Preprint), **Mohammed Latif Siddiq**, Simantika
Dristi, Joy Saha, and Joanna C. S. Santos

- ArXiv Preprint** 2023
Generate and Pray: Using SALLMS to Evaluate the Security of LLM Generated Code (Preprint),
Mohammed Latif Siddiq, and Joanna C. S. Santos
- ArXiv Preprint** 2023
A Lightweight Framework for High-Quality Code Generation (Preprint), **Mohammed Latif Siddiq**, Beatrice Casey, and Joanna C. S. Santos
- ArXiv Preprint** 2022
Shashthosheba: Dissecting Perception of Bangladeshi People towards Telemedicine Apps through the Lens of Features of the Apps (Preprint), Waqar Hassan Khan, Md Al Imran, Ahmed Nafis Fuad, **Mohammed Latif Siddiq**, and ABM Islam
- Bangladesh Blockchain Olympiad** 2022
Localized Sustainable and Ecofriendly Energy Generation and Distribution Using Blockchain Network: Bangladesh Perspective (Poster), Md. Abdullah Mia, Rashik Ahnaf, **Mohammed Latif Siddiq**, and Md. Mahmudur Rahman Sayem
- IEEE Computer Society Bangladesh Chapter Winter Symposium** 2020
Bangla Captioning Image Taken by Blind People (Extended Abstract), **Mohammed Latif Siddiq**, and Nafis Tahmid Chowdhury
- 4th International Conference on Networking, Systems, and Security (NSysS)** 2017
Online Blood Bank-Connecting Donors and Blood Needing People in Bangladesh (Poster), **Mohammed Latif Siddiq**, Aditya Chakma, and Farhan Tanvir Uthshaw

ACHIEVEMENTS

AI for Bangla, Bangladesh, 2021, Position: Top 30
Google Hashcode, Global, 2019, Position: 5th Among Bangladeshi Teams
IEEE Xtrme 12.0, Global, 2018, Position: 4th Among Bangladeshi Teams
AUB Programming Contest, Bangladesh, 2018, Position: 11th
Sumsung Coding Contest, Bangladesh, 2018, 2019, Finalist
Tech for Peace Hackathon, Bangladesh, 2017, Winner

TECHNICAL SKILLS

Languages: Java, C, C++, Python, Matlab, Dart, Shell
Database: Oracle, MySQL, SQLite, MongoDB, Firebase
OS: Windows, Ubuntu 20.04, Windows Server 2016, Mac OS Monterey, CentOS 7/RedHat
Version Control: Git(GitHub, Bitbucket, Gitlab), TFS(Azure DevOps)
Frameworks: Vue.js, JSP, Flutter, JavaFX, Node.js, Django, Java servlet
Web Technology: HTML, CSS, Rest API, JSON, XML
Cloud: EC2, S3 Bucket, Azure
Technical Writing: L^AT_EX, Beamer, Overleaf
Miscellaneous: Gradio, Langchain, Databricks, Google Apps Script, Software Defined Networking, PyTorch, OpenGL,
 Weka, Mininet, NS2

CERTIFICATES

TOEFL iBT
 Total: 99 (Out of 120, 30 Per section)
 Reading: 24, Listening: 27, Speaking: 23, Writing: 25
LinkedIn Assessment

C, C++, Python, Django, MongoDB, MySQL, Git, HTML, Windows server, and Machine Learning

Other Certifications

Deep Learning Specialization (Coursera), Human-Computer Interaction I (Edx.org), Cyber Security Essential (CISCO Learning Platform), Problem Solving (Advanced) Skills Certification Test (Hackerrank)

Problem Solving

Codeforces (Highest Rating: 1620), Codechef (Highest Rating: 1841), Hackerrank (Highest Rating: 1780)

SERVICES

Junior PC member, Mining Software Repositories 2024 conference (MSR 2024).

Committee Member, Artifact Evaluation Committee, The ACM SIGSOFT International Symposium on Software Testing and Analysis (ISSTA 2024).

Student volunteer, The IEEE/ACM International Conference on Software Engineering (ICSE 2024).

Treasurer, Bangladeshi Students Association of Notre Dame (BDSA-ND) (2023 - 24).

MENTORSHIP EXPERIENCE

All mentees were supervised in conjunction with Dr. Joanna C.S. Santos (University of Notre Dame).

* Mentees from University of Notre Dame.

@ Mentees from Bangladesh University of Engineering and Technology.

Spring 2022

Mark Cheng*

Summer 2022

Shafayat Hossain Majumder[@], Maisha Rahman Mim[@], and Sourov Jajodia[@]

Fall 2022

Ridwanul Hasan Tanvir[@], Noshin Ulfat[@], and Fahmid Al Rifat[@]

Spring 2023

Abdus Samee[@], Sk Ruhul Azgor[@], Md. Asif Haider[@], and Shehabul Islam Sawraz[@]

Summer 2023

Simantika Dristi,[@] and Joy Saha[@]

Fall 2023

Jiahao Zhang*, Anna Muller*, and Lindsay Roney*

Spring 2024

Lindsay Roney*, Sajith Devareddy*, Miguel Jose Maninang*, and Neol Gutierrez*

REFERENCE

Dr. Joanna Cecilia da Silva Santos

Assistant Professor

Department of Computer Science and Engineering

University of Notre Dame, IN, USA.

Email: joannacss AT nd DOT edu

Relation: Ph.D. Advisor