

# Mohammed Latif Siddiq

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

## EXECUTIVE SUMMERY

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- 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

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<b>University of Notre Dame</b> Ph.D. in Computer Science and Engineering Department of Computer Science and Engineering	January 2022 - Present  CGPA: 3.50/4.00
<b>Bangladesh University of Engineering and Technology</b> 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

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

## GRANTS & SCHOLARSHIPS

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<b>Travel Grants, NSF ICSE 2024 Travel Awards, 2024</b> 2,000\$ grants to participate in ICSE 2024 in-person and Student Mentoring Workshop with a 30% acceptance rate.
<b>Travel Grants, ACM SIGSOFT Travel Grants, 2023</b> 1,200\$ grants to participate in ICSE 2023 in-person and Student Mentoring Workshop in Melbourne, Australia.
<b>Travel Grants, Bangladesh Sweden Trust Fund, 2022 - 2023</b> Around 150\$ grants for one-way plane fare to attend USA school with financial funding.
<b>Travel Grants, NSF ICSE 2022 Travel Awards, 2022</b> 1,075\$ grants to participate in ICSE 2022 in-person and Student Mentoring Workshop along with complimentary registration for the conference.
<b>Research Assistantship, University of Notre Dame, 2022 - 2027</b> Tuition scholarship including health insurance, payment of the technology fee, health center access fees, and bimonthly stipends.

## Technical Scholarship, Bangladesh, 2016 - 2020

Complimentary 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.

## ACHIEVEMENTS

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**AI for Bangla, Bangladesh, 2021**, Position: Top 30

**Google Hashcode, Global 2019**, Position: 5<sup>th</sup> Among Bangladeshi Teams

**IEEE Xtrme 12.0, Global, 2018**, Position: 4<sup>th</sup> Among Bangladeshi Teams

**AUB Programming Contest, Bangladesh, 2018**, Position: 11<sup>th</sup>

**Sumsung Coding Contest, Bangladesh, 2018, 2019**, Finalist

**Tech for Peace Hackathon, Bangladesh, 2017**, Winner

## TECHNICAL SKILLS

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**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<sup>A</sup>T<sub>E</sub>X, Beamer, Overleaf

**Other:** Gradio, Langchain, Databricks, Google Apps Script, Software Defined Networking, PyTorch, OpenGL, Weka, Mininet, NS2

## PEER REVIEWED PUBLICATIONS

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28<sup>th</sup> **International Conference on Evaluation and Assessment in Software Engineering (EASE 2024)** 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

32<sup>nd</sup> **IEEE/ACM International Conference on Program Comprehension (ICPC 2024)** 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)

22<sup>nd</sup> **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

28<sup>th</sup> **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

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21<sup>st</sup> **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

- 46<sup>th</sup> **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
- 2<sup>nd</sup> **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
- 1<sup>st</sup> **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
- 1<sup>st</sup> **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

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- ArXiv Preprint** 2023  
*Generate and Pray: Using SALLMS to Evaluate the Security of LLM Generated Code*(Preprint),  
**Mohammed Latif Siddiq**, Joanna C. S. Santos
- ArXiv Preprint** 2023  
*A Lightweight Framework for High-Quality Code Generation*(Preprint), **Mohammed Latif Siddiq**, Beatrice  
 Casey, 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
- IEEE Computer Society Bangladesh Chapter Winter Symposium** 2020  
*Bangla Captioning Image Taken by Blind People*(Extended Abstract), **Mohammed Latif Siddiq**, and Nafis  
 Tahmid Chowdhury
- 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
- 4<sup>th</sup> **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

## CERTIFICATES

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### 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

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**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).

## REFERENCE

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**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