

Mohammed Latif Siddiq

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

EXECUTIVE SUMMERY

- Software engineering researcher with two years of hands-on experience developing and conducting research in the intersection of software security and applied machine learning.
- Published seven first-authored research papers, including two full conference papers in the top software engineering venues.
- Industry-level software engineering experience in developing enterprise software.

EDUCATION

University of Notre Dame Ph.D. in Computer Science and Engineering Department of Computer Science and Engineering	January 2022 - Present Running CGPA: 3.834/4.00
Bangladesh University of Engineering and Technology 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 software security and applied machine learning.• Published one full conference paper and three short workshop papers.	January, 2023 - Present
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

PEER REVIEWED PUBLICATIONS

- 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
SQIFIX: 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)

WORKSHOP PUBLICATIONS

- 2nd Intl. 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 Intl. 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 Intl. 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** 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**, ABM Islam
- IEEE Computer Society Bangladesh Chapter Winter Symposium** 2020
Bangla Captioning Image Taken by Blind People(Extended Abstract), **Mohammed Latif Siddiq**, 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**, Md. Mahmudur Rahman Sayem
- 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

RESEARCH PROJECTS

- Case Study: Wireshark**
Open Source Project, Threat Modeling, CVE March, 2022
- Analyzed the architectural structure and threat modeling of an open-source packet capturing and visualizing tool, Wireshark.
 - Decomposed the application, identified the threats, and documented a list of threats.
- Telemedicine Sectors in Bangladesh**
User-Centric Design, Human-Computer Interaction, Survey September, 2021
- Created a telemedicine solution for the project purpose
 - Analyzed the top telemedicine solutions in the market and compared them with our solution
- Detecting Security Bugs in GitHub Codes from the IoT Domain**
Python, Deep Learning, GHTorrent July, 2021
- Worked towards uncovering security flaws in IoT-related GitHub code under Dr. Gias Uddin, Assistant Professor, University of Calgary.
- Online Text Clustering for MOOCs** | *Python, Deep Learning, Online Algorithm, Django, Nuxt* April, 2021
- Worked to establish a way to accomplish online text clustering for MOOC questions with Dr. Shubhra Kanti Karmaker, Assistant Professor at Auburn University in Alabama.

- Generated Bangla captions for the image captured by blind persons, formally known as the VizWiz dataset, using the deep learning model.
- One of the top 30 AI initiatives for the Bangladesh Government's AI for Bangla Competition.

Detecting Number of TCP and UDP Flows in SDN by ML

Machine Learning, Networking SDN, OpenFlow Protocol, Mininet, IPERF, Weka November 2020

- Developed machine learning-based methods to detect the number of TCP and UDP flows in a Software-Defined Network simulated in Mininet using IPERF to generate flows.

ACHIEVEMENTS

AI FOR BANGLA, BANGLADESH, 2021

Position: Top 30

GOOGLE HASHCODE, GLOBAL, 2019

Position: 5th Among Bangladeshi Teams

IEEEEXTREME 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

SCHOLARSHIPS

TRAVEL GRANTS, ACM SIGSOFT TRAVEL GRANTS, 2023

1,200\$ grants to participate in ICSE 2023 in-person and Student Mentoring Workshop in Melbourne, Australia.

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.

MELCHOR FELLOWSHIP, UNIVERSITY OF NOTRE DAME, 2022-27

Tuition scholarship including health insurance, payment of the technology, health center access fees, and bimonthly stipends.

TECHNICAL SCHOLARSHIP, BANGLADESH, 2016-20

Complimentary scholarship for regular engineering students.

GOVERNMENT SCHOLARSHIP, BANGLADESH, 2016-20

Awarded For Outstanding Performance in Higher School Certificate Examination.

GOVERNMENT SCHOLARSHIP, BANGLADESH, 2011-12

Awarded For Outstanding Performance in Junior School Certificate Examination.

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

Other: 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)

HIGHLIGHTED ACADEMIC COURSES

Graduate Course, University of Notre Dame

CSE-60770 Secure Software Engineering

CSE 60625 Advanced Machine Learning

CSE 60647 Data Science

Undergraduate Course, Bangladesh University of Engineering and Technology

CSE-405 Computer Security

CSE-423 Fault Tolerant Systems

CSE-463 Introduction to Bioinformatics

CSE-471 Machine Learning

CSE-473 Pattern Recognition

REFERENCES

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