Mohammed Latif Siddiq

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GitHub | LinkedIn | Google Scholar | Researchgate

EDUCATION

University of Notre Dame   January 2022 - Present
Ph.D. in Computer Science and Engineering
Department of Computer Science and Engineering   Running CGPA: 3.834/4.00

Bangladesh University of Engineering and Technology   February 2016 - February 2021
Bachelor of Science in Computer Science and Engineering
Department of Computer Science and Engineering   CGPA: 3.46/4.00

PROFESSIONAL EXPERIENCES

University of Notre Dame, IN, USA | *Graduate Teaching Assistant*   January, 2022 - Present
- **Spring 2022**: CSE 30321 Computer Architecture
- **Fall 2022**: CSE 30332 Programming Paradigms

REVE Systems, Dhaka, Bangladesh | *Junior Software Engineer*   March, 2021 - November, 2021
- Developing enterprise software for Bangladesh Parliament Secretariat.
- **Tech stack**: Java servlet, JSP and MySQL.

PEER REVIEWED PUBLICATIONS

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

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

1st **Intl. Workshop on Natural Language-based Software Engineering Co-located with ICSE 2022**
BERT-Based GitHub Issue Report Classification, **Mohammed Latif Siddiq**, 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)

OTHER PUBLICATIONS

ArXiv Preprint, May, 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, 2020
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.

Bangla Image Captioning Captured by Blind People | *Keras, TensorFlow, Python, AWS*   December, 2020

- 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.

ACADEMIC PROJECTS

Bugs Investigating and Mitigation | *Django*   February, 2022

- Investigated bugs for a live Django application, possible consequences, and mitigation techniques.

Security Attack Tools and Defenders | *Python, Scapy*   June, 2020

- Demonstrated common security attacks and solutions, such as port scanning, DOS attacks on DNS servers, ARP Cache poisoning, and Dictionary attacks.

Shashtho Sheba | *Flutter, Node.js, Firebase, MongoDB, AppRTC, AWS*   November, 2020

- Created a cluster-based telemedicine mobile application to help the doctor and patient find the real-life experience of a traditional doctor's chamber.

API for Bangladeshi Medicine | *Node.js, MongoDB*   November, 2020

- A subproduct of *Shashtho Sheba* to provide the medical information such as price, generic name, and company name.

Obogoto | *Flutter, Google Apps Script, Google Map API, ML*   March, 2020

- A mobile application for contact tracing and information providers about Covid-19.
- Help to check out symptoms of Covid-19 and track real-time information about the affected rate and death rate.
- Provide information about nearby hospitals and medical centers.

Vasha Shikkha | *Laravel, Flutter, MySQL, Node.js*   October, 2019

- A cross-platform application for teaching language.
- Help people learn a new language interactively.

Miscellaneous   2016 - 2019

- Using AtMega and Arduino to an RFID-based Ticket Purchasing System for Metro rail.
- Online book-sharing platform and a blood donation system using Java.
- Snake and Ladder board game simulation using OpenGL and C.

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

ACHIEVEMENTS

AI FOR BANGLA, BANGLADESH, 2021
Position: Top 30

GOOGLE HASHCODE, GLOBAL, 2019
Position: 5th Among Bangladeshi Teams

IEEEXTREME 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, 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: LaTeX, Beamer, Overleaf
Other: Google Apps Script, Software Defined Networking, PyTorch, OpenGL, Weka, Mininet, NS2

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