

# Mohammed Latif Siddiq

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

## EDUCATION

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### 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

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### 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

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**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)

## WORKSHOP PUBLICATIONS

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**2<sup>nd</sup> 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

**1<sup>st</sup> 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

**1<sup>st</sup> 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

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- 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
- 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

## RESEARCH PROJECTS

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- 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

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### 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

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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)

## HIGHLIGHTED ACADEMIC COURSES

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### **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

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### **AI FOR BANGLA, BANGLADESH, 2021**

Position: Top 30

### **GOOGLE HASHCODE, GLOBAL, 2019**

Position: 5<sup>th</sup> Among Bangladeshi Teams

### **IEEEEXTREME 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

## SCHOLARSHIPS

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### **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

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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:** Google Apps Script, Software Defined Networking, PyTorch, OpenGL, Weka, Mininet, NS2

## REFERENCES

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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