

Fahmid Al Rifat

Bangladesh University of Engineering and Technology

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[GitHub](#) | [Hacker Rank](#) | [Behance](#)

PROFESSIONAL EXPERIENCE

United International University | *Lecturer*

July 11, 2023 - Present

- As a lecturer of computer science at United International University, I instruct courses such as Data Structure and Algorithm, Engineering Ethics, Digital Logic Design, and contribute to academic development by guiding projects and research.
- United International University is one of the top private universities in Dhaka, Bangladesh. It is ranked 1201-1400 in QS World University Rankings 2023.

Security and Software Engineering (S2E) lab | *Graduate Research Assistant*

February, 2022 - July, 2023

- Working in the intersection of language models, their application, and security and also prompt engineering, code generation, code comment classification etc
- Worked on three peer-reviewed research papers.

EDUCATION

Bangladesh University of Engineering and Technology

March, 2017 - May, 2023

Bachelor of Science in Computer Science and Engineering

CGPA (Majors): 3.75/4.00

Department of Computer Science and Engineering

CGPA (Last year): 3.91/4.00

Graduated with High Honor in Computer Science

CGPA (Actual) : 3.65/4.00

Dhaka Residential Model College

February, 2015 - February, 2017

Higher Secondary Certificate (HSC)

Graduated with High Honor in Science

GPA: 5.00/5.00

Rangpur Zilla School

February, 2013 - February, 2015

Secondary School Certificate (SSC)

Graduated with High Honor in Science

GPA: 5.00/5.00

RESEARCH PROJECTS

Exploring the Effectiveness of Large Language Models in Generating Unit Tests

Cyber-Security, Automated unit test generation, GitHub Copilot

September, 2022

- Conducted empirical study on GitHub Copilot for automated unit test generation under **Professor Joanna C. S. Santos** at the University of Notre Dame, USA.
- Collaborated in the S2E lab, exploring generative models' capabilities for unit test generation, currently under JSS review. Enhanced skills in data preprocessing, generative models, and global research methodologies and Anticipating future contributions to the field of Security.
- Explored effectiveness of Codex, GPT-3.5-Turbo, and StarCoder

Cover Image Selection for RGB Image Steganography using Genetic Algorithm

Cybersecurity, Image steganography Genetic algorithm, Optimal method

March, 2022

- Pursuing a thesis project under the guidance of **Dr. M. Sohel Rahman**, Professor of Computer Science and Engineering at Bangladesh University of Engineering and Technology (BUET).

- Research aims to develop an optimal method for selecting cover photos for image steganography using a genetic algorithm. enhancing the security of image steganography and creating a secure method for hiding information within images.

Static analysis in the context of the container domain

Cybersecurity , Static analysi , Containerized environments , Security vulnerabilities

March, 2022

- Participating in a collaborative research endeavor with **Dr. Md. Shohrab Hossain** from the Department of Computer Science and Engineering at Bangladesh University of Engineering and Technology, and **Suryadipta Majumdar**, Assistant Professor at the Concordia Institute for Information Systems Engineering (CIISE).
- Research aims to develop a methodology for static analysis in containerized environments, evaluating the efficacy and limitations of static analysis tools and approaches for discovering security vulnerabilities in containerized settings.

PROFESSIONAL PROJECTS

Icece Buet Website | *Laravel, CSS, PHP*

May , 2022 | [Website](#)

- Led development and maintenance of a full-stack web application for the International Conference on Electrical and Computer Engineering.
- Acted as primary developer, implementing new modules, integrating a payment gateway, and overseeing ongoing maintenance and updates.

Raven-claws E-commerce Website Development | *Wordpress, CSS, PHP*

November, 2020 | [Website](#)

- Developed a full-stack e-commerce web app for Raven-claws Company, a well-known multi-purpose online shop.
- Incorporated features such as subscription-based reviews, sales, and admin recommendations to enhance functionality.

ACADEMIC PROJECTS

Dormitory management system | *Node.js ,React , MongoDB*

May, 2022 | [GitHub](#)

A Node.js-based web application for efficient dormitory management, encompassing dining, room allocation, certificate automation, service requests, and various features benefiting students, provost, service personnel, and dining managers.

Hall management system | *Django , MongoDB*

January, 2022 | [GitHub](#)

A web application for managing important functionalities of a dormitory. This application helps student, provost, staffs to complete and keep track of dormitory related process easily under Dr. Md. Mostofa Akbar, CSE, BUET.

Defending Black Hole Attack | *Network Simulator 3(NS3) , C , Python , GNU-Plot*

January, 2022 | [GitHub](#)

Improved AODV protocol in Network Simulator 3 to mitigate the impact of black hole attacks, supervised by Dr. Md. Shohrab Hossain.

Smart Cart | *C, Arduino, ATmega 32, Atmel Studio, Proteus 832*

November, 2021 | [YouTube](#)

Our team developed a functional smart cart prototype with automatic collision detection and handling capability. Implemented through software simulation and small-scale hardware using AT-Mega32 and Arduino, it has potential practical applications

Travel Agency BD | *Django, Oracle SQL, HTML, CSS*

November, 2021 | [YouTube](#)

Developed a web application for Travel Agency BD, providing travel and tourism services with accommodation, travel packages, and database development, under the guidance of Dr. Muhammad Abdullah Adnan, CSE, BUET.

Mili Militia Pro | *Java , JavaFx , Socket programming*

November, 2020 | [GitHub](#)

Developed a server-client multiplayer adventure game under the supervision of Md. Tarikul Islam Papon, enabling users to create and join battle rooms with a variety of weapons.

NFS Kill Trone | *C++ , iGraphics Custom Library*

November, 2018 | [YouTube](#)

Under the supervision of Md. Shohrab Hossain, developed a graphical adventure game was developed utilizing a custom game engine.

OTHERS PROJECTS

Cryptography Hybrid Model | *Python , Socket programming*

May, 2022 | [GitHub](#)

File Transfer TCP | *Java , Socket programming*

January, 2022 | [GitHub](#)

Word-Count-JavaFX | *Java, JavaFX*

January, 2019 | [GitHub](#)

Text-Sliding-iGraphics | *C++ , iGraphics Custom Library*

November, 2018 | [GitHub](#)

Analog-Clock-iGraphics | *C++ , iGraphics Custom Library*

November, 2018 | [GitHub](#)

ACADEMIC COURSE WORKS

Machine Learning | *L^AT_EX, Python , C++*

January , 2023 | [GitHub](#)

Algorithm Engineering | *Python , C++*

January , 2023 | [GitHub](#)

High Performance Database System

January , 2023

Fault tolerance System

January , 2023

Computer Security | *Python , C++*

May , 2022 | [GitHub](#)

Computer Graphics | *OpenGL ,Python , C++*

May , 2022 [GitHub](#)

Adding Memory Managing , Scheduling feature in Xv6 | *MIT Xv6 code-base , C++*

January, 2022 | [GitHub](#)

Information-System-Design | *Draw.io , Power-Point*

January, 2022 | [GitHub](#)

Artificial Intelligence | *C++ , Java*

January, 2022 | [GitHub](#)

Compiler | *Flex , Bison , EMU 8086*

September, 2021 | [GitHub](#)

Software Engineering | *C++ , Java, Junit*

September, 2021 | [GitHub](#)

Computer Architecture | *Proteus 832, Logisim*

September, 2021 | [GitHub](#)

Data Structure And Algorithm | *C,C++*

January, 2021 | [GitHub](#)

Digital Logic Design | *Hardware, Wires, IC*

April, 2019

Numerical Methods | *Advanced Python, graphical tools for python, numpy, pandas*

April, 2019 | [GitHub](#)

ACHIEVEMENTS

Achievements in Capture the Flag (CTF) Competitions

- Placed Top 10 in the National Cyber Drill 2023
- Placed Final Round in the Leetcon CTF
- Placed Final Round in the SUST CTF

Mathematical Olympiad

Position: 3rd - Regional

Bangladesh University of Engineering and Technology — Architecture Admission Test (2017)

Position: 8th all Bangladeshi students

University of Dhaka — Admission Test (2017) - Position: 215th all Bangladeshi students

Medical Admission Test (2017) -5th Choice : Sylhet MAG Osmani Medical College

College Examination (2016) - Position: 2th among all sections

Secondary School Certificate (2017) - Position: 7th among Region

Awarded IST position in victory Day and Independence day Art competition organize by BD National Museum - Position: Top 1

Awarded several times in art and literature competition organize by Shilpachargo jonyal avedin sangrohosala, Mymensingh - Position: Top 1

SCHOLARSHIPS

Dean's List Scholarship, BUET, 2022-23

Students obtaining an average GPA of 3.75 or above in two consecutive terms.

TECHNICAL SCHOLARSHIP, BUET, 2017-22

Complimentary scholarship for regular engineering students.

GOVERNMENT SCHOLARSHIP, BANGLADESH, 2015-17

Awarded For Outstanding Performance in Secondary School Certificate Examination.

EXTRA-CURRICULAR ACTIVITIES

Cyber-Security Club - Vice President

- Planning and organizing workshops and Capture the Flag (CTF) competitions .
- Led a team of members to participate in Cyber-security events, providing mentorship and guidance
- Collaborated with professors and industry professionals to provide resources and opportunities.

Attended green brick project organize by UNDP Bangladesh

ESPL Mobile Legend tournament runners-up (2020-21)

TECHNICAL SKILLS

Languages: Java, C, C++, Python, Matlab, JavaFX , Gnu-Plot, Bash , Assembly

Database: Oracle, MySQL, SQLite, MongoDB

OS: Windows, Linux(Kali,Ubuntu, Seed-Lab)

Version Control: Git(GitHub)

Frameworks: JavaFX, Django , Node.js, React

Web Technology: HTML, CSS, PHP, Bootstrap, Word-press, JSON, XML

Graphics Technology: Auto-Cad, Photoshop, Illustrator, PowerPoint, Premier Pro, Kine-Master

Compiler IDE: Flex , Bison , EMO 8086

Micro-Controller: Arduino , ATmega 32, Atmel Studio , Proteus 832

Technical Writing: L^AT_EX, Beamer, Overleaf

Other: Networking Simulator 3 (NS3), iGraphics , Cisco-Packet-Tracer , PyTorch , open-GL

CERTIFICATES

Informatics Olympiad

Problem Solving

Codeforces, Hackerrank, Choco-solver (CSP)

Digital Marketing , Animation by 10 min school

Advance photography , Graphics Design by Ghuri Learning

REFERENCES

Dr. M. Sohel Rahman

Professor, Department of Computer Science and Engineering
Bangladesh University of Engineering and Technology, Dhaka, Bangladesh.

Email: sohel.kel@gmail.com

Phone: +8801552389480

Relation: Undergrad Thesis Supervisor

Dr. Joanna Cecilia da Silva Santos

Assistant Professor, Department of Computer Science and Engineering
University of Notre Dame, IN, USA.

Email: joannacss@nd.edu

Relation: Research Advisor

Note: Additional references can be provided as required.

PERSONAL DETAILS

Fahmid Al Rifat

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Father's Name: Farid Ahmed

Secretary, Ministry of Primary and Mass Education,
Government of the People's Republic of Bangladesh

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Mother's Name: Farhana Yasmin

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Brother's Name: Tahmid Al Sifat

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Permanent Address: Vill: Char Ahmedpur Upz: Monohardi , Dt: Narsingdi