Yeaseen Arafat

Salt Lake City, Utah, USA

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DIALECTIC INTERESTS

- **Automated Software Testing and AI-Driven Security:**
  - Specialized in automated fuzzing techniques and AI-driven approaches for testing and enhancing the security of programming language tools (compilers, decompilers, and transpilers).
  - Proficient in developing and applying advanced bug discovery and vulnerability triage algorithms.
  - Expert in applying static and dynamic analysis, reverse engineering, and comprehensive forensic investigations to ensure robust software integrity.
- **CTFs & Wargames**

SCHOLARLY HIGHLIGHTS

🎓 **The University of Utah**

PhD in Computer Science *August 2023 – Present*

Supervisor: Dr. Stefan Nagy

🎓 **Bangladesh University of Engineering and Technology (BUET)**

B.Sc. Engg. in Computer Science and Engineering *February 2015 – April 2019*

Supervisor: Dr. A.K.M. Ashikur Rahman

OCCUPATIONAL VENTURES

Graduate Research Assistant — May 2024 – Present
Kahlert School of Computing, The University of Utah. [On-site] — *Utah, USA*

Graduate Teaching Assistant — Jan 2024 – April 2024
Kahlert School of Computing, The University of Utah. [On-site] — *Utah, USA*

Lecturer — June 2019 – July 2023(On Leave)
Computer Science and Engineering, Southeast University. [On-site] — *Dhaka, Bangladesh*

Graduate Research Fellow — August 2023 – Dec 2023
Kahlert School of Computing, The University of Utah. [On-site] — *Utah, USA*

Co-founder && Administrative Director — Sep 2022 – Dec 2023
FishPortbd. [Remote] — *Chattogram, Bangladesh*

Undergraduate Researcher — April 2018 – April 2019
Computer Science and Engineering, BUET. [On-site] — *Dhaka, Bangladesh*

Technical Support Staff — Jan 2012 – Dec 2014
Alif Marine & Engineering Services LTD. [Hybrid] — *Chattogram, Bangladesh*

RESEARCH EXPERIENCES

Generative AI-driven model for testing Programming Language tools — Ongoing
Under the supervision of Dr. Stefan Nagy in his FuTURES³ Lab

FuzzTranspilers — Ongoing
Under the supervision of Dr. Stefan Nagy in his FuTURES³ Lab

A Machine Learning Approach for Protecting Wireless Networks — B.Sc. Thesis
Against Virtual Jamming Based Denial of Service (DoS) Attacks [Thesis]
Under the supervision of Dr. A.K.M. Ashikur Rahman, Dept. of CSE, BUET

PUBLICATIONS

Conference:

- ***Yeaseen Arafat***, Kazi Samin Yeaser, Ashikur Rahman, Arnab Dasgupta, "A Machine Learning based Approach for Protecting Wireless Networks Against DoS Attacks", in Proceedings of the 7th International Conference on Networking, Systems and Security (7th NSysS 2020), December 22-24, 2020, Dhaka, Bangladesh. (Acceptance Rate: 29%) Publisher: ACM, New York, NY, USA, 126–132. [doi]

Notable Academic Endeavours

IInstagram : Social media | *MERN Stack* ⌂ GitHub
- A social media app inspired by Instagram.

EduCComp | *Flex, Bison, Yacc* ⌂ GitHub
- A subset of C compiler compiles C code and generates assembly code for x86 architecture.

ADD Nachos, OS_Features | *C++, Make, Nachos* ⌂ GitHub
- This OS-build project is an extension of Nachos, a UNIX-like OS.
- The vanilla Nachos is extended by basic multi-programming and Virtual Memory Manager.

ML projects | *Python* ⌂ GitHub
- Scratch-implementation of pattern recognition models and some renowned ML models
- Decision Tree(ID3) with AdaBoost, Perceptrons, Recommender
- Artificial Neural Network, Channel Equalizer

EventPlanner | *MERNG Stack* ⌂ GitHub
- This SPA is for planning events and tracking event logs.

Angry Birds | *C, iGraphics* ⌂ GitHub
- A casual puzzle video game based on an Android game of the same name.

Play & Learn : All about cognition | *Android Native* ⌂ GitHub
- A simple Android app for children on the spectrum by which they can learn through play.

DDD: Drunk Driver Detector | *Node ESP8266, MQ-5, DC Motor, LCD* ▶ YouTube
- This project aims to detect any alcoholic driver to avoid unnecessary accidents.

Amazon Echo : Home automation | *Raspberry Pi 3, Amazon Alexa, Node ESP8266* ▶ YouTube
- Voice assistant for users to remotely turn on and off electric devices.

Award & Honors

- Graduate Fellowship at The University of Utah (2023)
- University Merit Scholarship from BUET (2015-2019)
- Junior Government Scholarship, Chittagong Education Board, Bangladesh (2009)

Outreach Activities

- **Artifact Evaluation Committee:** ACM CCS 2024
- **Conference Attendee:** KubeCon+CloudNativeCon North America 2024 — Highlights from KubeCon 2024
- **Organizing Committee Member:** ACM ICPC ASIA Regional, Dhaka Site 2019
- **Graduate RA:** FuTURES³ Lab
- **Member:** Association for Computing Machinery (ACM)
- **Member:** Cybersecurity Club, University of Utah [utahsec]

Teaching Experiences

Kahlert School of Computing, The University of Utah Utah, USA
Teaching Assistant
- CSE-4480 : Computer Networks Spring 2024
    - Instructor: Prof. Ryan Stutsman

Southeast University, Computer Science and Engineering Dhaka, Bangladesh
Lecturer 2019 – 2023
- CSE-4013 : Computer Graphics and Animation
- CSE-3031 : Operating Systems
- CSE-161 :   Programming Language C
- CSE-4011 : Computer Networking
- CSE-3014 : Microprocessor Design & Assembly Language

Technical Aptitude

Programming Languages: C/C++, Python, Java, Wasm, Assembly (Intel ×86, MIPS)
Security Tools: AFL, AFL++, Burp Suite, sqlmap, Havij, Snort
RE Tools: ghidra, Pwndbg, checksec, Ropper
Data Science Libraries: Tensorflow, Keras, NumPy, scikit-learn, Pandas, Matplotlib
Frameworks: React, Node.js, Express.js, Android Native, JavaFX, Java Swing
Scripting & Modeling: LaTeX, HTML, JavaScript, TypeScript, Shell Script, UML, ER Diagram
Blockchain tech: Ethereum, Smart Contracts, Solidity, Truffle Suite
DevOps & PaaS: GitHub, Docker, REST API, GraphQL, Heroku
Other tools: Nachos, Makefile, Git, Flex, Bison, YACC, OpenGL, iGraphics
Database: MongoDB, Neo4j, Oracle SQL, MySQL
Networking Tools: ns-2, Wireshark, tcpdump, Packet Tracer
OS: Kali Linux, Ubuntu, Mac, Raspbian
Embedded Systems: Logisim, Arduino, Node MCU, ATMega32, RaspberryPi 3, AVR micro-controllers

Professional Endorsements

Dr. Stefan Nagy
Assistant Professor
Kahlert School of Computing
The University of Utah
PhD Supervisor
Email: snagy@cs.utah.edu

Dr. A.K.M. Ashikur Rahman
Professor
Department of CSE
Bangladesh University of Engineering & Tehcnology
B.Sc. Thesis Supervisor
Email: ashikur@cse.buet.ac.bd