Yeaseen Arafat

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DIALECTIC INTERESTS

- **Confluence of Computing Systems, Software plus Cyber Security**, software vetting; bug discovery; fuzzing compilers, decompilers, and transpilers; vulnerability triage; program analysis: static and dynamic; return-oriented programming; reverse engineering; reconnaissance; vulnerability scanning; penetration testing attack; intrusion detection system, forensics: memory, network and disk dumps

- **Cross-Language Compilation and Low-level Optimization**, language-agnostic parser; mutation & optimization of Intermediate Representations

- **Onto Secure Systems**, privilege separation; capabilities escalation; input sanitization; code obfuscation; ambiguous translation; containerization; sandboxing; virtualization;

- **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 Fellow August 2023 – Dec 2023

Kahlert School of Computing, The University of Utah. [On-site] *Utah, USA*

Co-founder && Administrative Director Sep 2022 – Present

FishPortbd. [Remote] *Chattogram, Bangladesh*

Lecturer June 2019 – July 2023(On Leave)

Computer Science and Engineering, Southeast University. [On-site] *Dhaka, 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

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.

A subset of C compiler | *Flex, Bison, Yacc* ⭘ GitHub
- The compiler converts C files all the way to intermediate code generation.

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)

ACTIVITIES

- **Organizing Committee Member:** ACM ICPC ASIA Regional, Dhaka Site 2019

- **Member:** Cybersecurity Club, University of Utah [utahsec]

TEACHING EXPERIENCES

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