Md Ali

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Integrity First • Always Loyal • Never Stop Learning

Summary

Md Ali is a self-starter, motivated individual who is a firm believer in continuous learning. He is fluent in Russian, Bengali, and is currently learning Chinese. He is also a PhD candidate in Computer Science at Capitol Technology University. He is currently a cybersecurity consultant at Burwood Group Inc. where he focuses in on GRC policies and pentesting engagements. He is also a part-time cybersecurity instructor at ThriveDX where he teaches on pentesting techniques, defensive operations, and network theory. He also spends his time volunteering at Gain Peace as a public speaker. He obtained two Masters of Science degrees, one in Computer Science and one in Applied Cybersecurity and Digital Forensics, in addition he holds two Bachelor of Science degrees in Physics and Applied Mathematics.

Work Experience

Cybersecurity Consultant – Burwood Group Inc. August 2022 – Present
Chicago, IL

- Client engagements regarding GRC policy and pentesting engagements. This includes technical and non-technical expertise.
- Conduct GRC guidelines according to frameworks such as NIST and conducting annual SRAs for various clients.
- Pentesting engagements include from wide variety of clients, utilizing BlackArch Linux to pentest servers, machines, and devices across external, internal, and web applications.
- Current engagements range from healthcare, educational systems, and financial institutions. This includes to consult, operate, and integrate solution in each domain for cybersecurity perspective.

Cybersecurity Instructor – ThriveDX November 2022 – Present
Chicago, IL

- Highly interactive remote cybersecurity instructor with varying courses such as ethical hacking, game theory, network security, python course, linux security, cloud security, and digital forensics incident response.
- Familiar with common security measures such as network access control, device control, whitening solutions, mail relay, endpoint protection solutions, IR/DR, and social engineering.

Research Aide – Argonne National Laboratory May 2022 – August 2022
Lemont, IL

- Worked under Dr. Yuri Alexeev to find an optimal tensor contraction on Argonne developed tensor network quantum simulator QTensor.
- This involves developing a parallel optimizer written in Julia to find an optimal tenor contraction sequences for large problems running on Polaris and Aurora supercomputers.
- The kernel utilizes Julia and presents our findings on a Jupyter notebook, where the overall goal is to find the optimal tensor contraction sequences for quantum supremacy Sycamore and QAOA quantum circuits to demonstrate quantum advantage.

Research Assistant – Illinois Institute of Technology August 2020 – May 2022
Chicago, IL

- Researched in the HExSA labs at Illinois Institute of Technology under the advisement of Dr. Kyle Hale. In the HExSA lab, the various research projects that I am involved in are in regards to distributed computing, operating systems, and programming languages.
- Conducted research under Dr. Stefan Muller, utilizing WCET (Worst Case Execution Time) such as OTAWA and RAML that analyze ARM binaries with OCaml programs that effectively generates an approximation of code execution timing in higher level languages such as Python, C++, etc. This provides a cost effective way of looking at higher level languages without having to run them or have any errors that may need to be checked manually that will also be costly. This includes program verification of sequential and concurrent programs. This automation are comparable to manually checking each case inside OCaml programs and we are currently working on expanding this work for other various programs.
- Researched a dynamic environment in the regards to edge computing that leverages programming language techniques and using virtual machines as a test bay to simulate a dynamic environment. This consists of utilizing a custom interpreter as well as a stack machine to calculate the cost in a real world scenario.

Graduate Researcher & Teaching Assistant – Illinois Institute of Technology August 2019 – July 2020
Chicago, IL

- Researched human trafficking and child predators that utilized encryption, stenography, and social engineering techniques to conduct their criminal activities under the advisement of Dr. Louis McHugh. This involved statistical analysis with many clear net and deep web pages that included hidden messages and computer forensics that are able to decrypt the encrypted drives.
- Conducted a mini research project into supply chain attacks, where he conducted a case study into the various methodology that make a supply chain attack successful across Eastern Europe.
- Teaching assistant for, "Data Networks and the Internet" that involved grading, evaluating, and lecturing during the Fall 2020 and Spring 2020. This role required to be technically proficient in network design, theory, and implementation. This included an in depth knowledge of various network topologies, TCP/UDP ports, and the OSI model.
- Teaching assistant for "Enterprise Server Admin" that involved grading, evaluating, and lecturing during the Spring of 2020. This role required him to be knowledgeable in Windows 2012/R2 servers. This included on how to set up, implementation, and troubleshoot the server.

Undergraduate Research Fellow – Early Universe, Cosmology, & Strings August 2016 – August 2018
San Marcos, TX

- Published a research paper regarding general relativist invariants of black holes, wormholes, and the Alcubierre metric. This involved analyzing FORTRAN code and converting the code into C++ and Python. This involved of hand calculation of tensors to confirm that we were receive the correct responses from the computer code. The publication included mathematical models and detailed proofs about the metric involved.
- Research regarding the investigation of negative probabilities and quasi-distribution. This involved heavily using R simulation specifically with the gold slit experiment. Quantum mechanics with R to statistically calculate the negative probability of a proton passing through both slits instead of one. The model was then showcased to a panel of research professor for approval in a independent research course where funding was given which was approved.

Education

Capitol Technology University • Laurel, MD January 2023 – Present
Doctor of Philosophy • *Computer Science*

Illinois Institute of Technology • Chicago, IL August 2020 – December 2022
Masters of Applied Science • *Computer Science*

Illinois Institute of Technology • Chicago, IL June 2019 – August 2020
Masters of Science • *Applied Cybersecurity & Digital Forensics*

Texas State University • San Marcos, TX August 2015 – May 2019
Bachelor of Science • *Physics & Applied Mathematics*

Volunteer Experience

- ACM SIGPLAN Conference on Systems, Programming, Languages, and Applications: Software for Humanity Student Volunteer – Association for Computing Machinery
- Women in Cybersecurity (WiCys) Mentor 2020 – Illinois Institute of Technology

Achievements & Organizations

- Gain Peace Speaker 2023 – Gain Peace
- ACM Student Member 2021 – Illinois Institute of Technology
- IEEE Student Member 2020 – Illinois Institute of Technology
- Illinois Tech Alumni Association Member 2020 – Illinois Institute of Technology
- Texas State Alumni Association 2019 – Texas State University
- Sigma Pi Sigma Physics National Honor Society 2019 – Texas State University
- Mathematical Association of America 2019 – Texas State University
- Mathematics Excellence Award 2019 – Texas State University
- Society of Physics Students 2015 – Texas State University