Md Ali

+1 312.882.5544 • mdali251@yahoo.com • linkedin.com/in/md-aliev/ • alihmd.com

Integrity First • Always Loyal • Never Stop Learning

Summary

I am currently working as a Cybersecurity Consultant at Burwood Group Inc. My responsibilities include conducting pen-testing and implementing GRC practices in various sectors such as healthcare, education, and financial institutions. Apart from my professional commitments, I also work as a part-time instructor at ThriveDX, where I teach Cybersecurity concepts with an emphasis on offensive security, defensive operations, and GRC principles. Additionally, I am an adjunct professor at the Illinois Institute of Technology, which has helped me gain a deeper understanding of technology as I teach undergraduate and graduate students. In my free time, I enjoy learning new languages. I am currently fluent in English, Russian, and Bengali, and I am focusing on learning Chinese.

Work Experience

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

- I provide comprehensive support for GRC policy and pen-testing needs, using my expertise to give clients guidance, solutions, and recommendations.
- Following GRC guidelines, developing policies and standards on robust frameworks like NIST, HIPPA, and PCI compliance which we use to ensure that our client's security and privacy are always protected. We conduct yearly SRAs for all our clients, regardless of their background, to ensure that we stay ahead of any potential risks or threats. Our dedication to following these guidelines allows us to provide our clients with the highest level of service and protection possible.
- During pen-testing engagements, we serve a diverse range of clients and use BlackArch Linux to conduct thorough testing of servers, machines, and devices, including external, internal, and web applications.
- My current work involves a wide range of industries, such as healthcare, education, and finance. I provide consulting services, operate systems, and integrate solutions from a cybersecurity standpoint, ensuring the safety and security of each domain.

Adjunct Professor – Illinois Institute of Technology August 2023 – Present
Chicago, IL

- I currently teach undergraduate and graduate students across object-oriented programming and system security. I leverage my expertise in computer science to develop comprehensive curricula that engage students in a variety of programming languages and techniques
- I also provide one-on-one mentorship and guidance to students, helping them to identify and overcome challenges in their coursework. Overall, I am committed to fostering a collaborative and supportive learning environment that equips students with the technical skills and critical thinking abilities they need to succeed in their future careers.

Cybersecurity Instructor – ThriveDX November 2022 – Present
Chicago, IL

- As a remote cybersecurity instructor, I provide an array of courses that cover essential topics like ethical hacking, game theory, network security, Python, Linux security, cloud security, and digital forensics incident response. My classes are designed to be highly interactive and engaging, ensuring that my students receive top-tier instruction and leave with the skills and knowledge necessary to excel in the field of cybersecurity.
- An abundance of knowledge regarding the latest security protocols, encompassing network access control, device control, whitelisting solutions, mail relays, endpoint protection solutions, IR/DR, and social engineering.

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

- Dr. Yuri Alexeev and I collaborated in our search for the ultimate tensor contraction method, utilizing the powerful QTensor quantum simulator from Argonne.
- 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 with emphasis on dynamic environments with remote cores in regards to edge computing cases. By leveraging programming language techniques and custom made virtual machines, I was able to simulate a highly dynamic network and calculate the cost in a real-world scenario utilizing the Sniper platform for simulation for Coalescent Computing.
- 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 Researcher & Lab Instructor – Texas State University May 2016 – May 2019
San Marcos, TX

- Mini research project utilizing C++ to theoretically calculate and model the decay of cube satellites in the atmosphere. This resulted in constructing a GUI interface to make the program user friendly. This included having weekly meetings to discuss about the project and current astrophysics phenomenons that may have any affect on the cube satellites.
- Laboratory instructor for introductory physics lab 1 and 2. This involved grading and lecturing about basic physics concepts in a hands on environment. This included concepts from mechanics to electrodynamics concepts.

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.

Publications

Curvature Invariants for the Accelerating Natario Warp Drive September 2020
Particles

- A process for using curvature invariants is applied to evaluate the accelerating Natário warp drive.
- Plotting various Ricci scalars and invariants. These plots had shown key features of the Natário warp bubble such as a flat harbor in the center of it, a dynamic wake, and the internal structures of the warp bubble.

Human Trafficking and the Internet July 2020
Illinois Institute of Technology

- Analyzed methodologies of encryption and stenography techniques used by human traffickers.
- Researched different methods of social engineering that the internet and other technology has introduced in human trafficking.
- Utilized statistical analysis to show case preventive measures to inform the community in order to lower the number of victims in human trafficking.

Curvature Invariants for Lorentzian Traversable Wormholes January 2020
Universe

- A process for using curvature invariants is applied as a new means to evaluate the traversability of Lorentzian wormholes and to display the wormhole space time manifold.
- Riemann tensor, Ricci tensor, Ricci scaler, trace free Ricci tensor, and Weyl tensor were all calculated by hand and with Python. Mathematically model the curvatures using Jupyter Notebook to compliment our findings.

Education & Certifications

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

Practical Network Penetration Tester • TCM Security November 2023
Ethical Hacking Certification

Vulnerability Management • Qualys September 2022
Qualys Certified Specialist

Pentest+ • CompTIA June 2021
Pentesting Specialization

Volunteer Experience

- 40th Ward Alderman – Volunteering Services for Chicago's Alderman Andre Vasquez
- 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

- IEEE Student Member 2020 – Illinois Institute of Technology
- 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