

Aliyah Carter

Columbia, South Carolina 29204 | Computer Scientist | aliyahzcarter@gmail.com | (803)-999-8858 | github.com/aliyahzcarter

EDUCATION

Doctor of Philosophy in Informatics **Fall 2024**
University of South Carolina **GPA: N/A**

Masters of Science in Computer Science
Norfolk State University **July 2021**
GPA: 3.7

Bachelors of Science in Computer Science: Information Assurance
Minor: Applied Mathematics
Norfolk State University **May 2018**
GPA: 3.3

TECHNICAL SKILLS

Programming Languages: C/C++, C#, Java, Python, HTML, CSS JavaScript, SQL, SPARQL, Scratch, COBOL, APS,JCL,DB2

Cyber Security/Digital Forensics: Kali Linux, Wireshark, BROIDS, FTK Imager, Autopsy, QuickStego, NMAP, Metasploit, Blue Snarfer, IDAPro,,Network Security, SEL4 OS, Ethical Hacking

Software Development Frameworks/Platforms:Unity Gaming Engine, Android Studios, UWP

General Technical Skills: Linux, Linux Administration, Active Directory, Git Lab, Git, Dockero, VMWare, KACE Server, GraphDB, IT Troubleshooting, DNS Management, Content Management Systems, Software/Systems Design, QEMU Simulator, MBED, Microcontroller Programming, Game Development, Database Management , Networking, Software Testing, TSO,

Research Areas: Human Centered Computing, Social Informatics, IoT Security, UX/UI, Computer Science Education, Usable Security, Internet Ethics/Identity

Non-Technical Skills: Organization, Oral Presentation, Project Management, Professionalism, Critical Thinking, Microsoft Office Suite

INDUSTRY EXPERIENCE

Adjunct Professor – Benedict College – August 2024 -Present

- Provide synchronous instruction for students in the CSC 132 (Introduction to Computing and Programming Concepts) course/ CSC 138 C++ Object Oriented Programming
- Monitor student progress and develop student success plans to increase academic wellness
- Utilize various online learning platforms and software's to deliver instruction with external supporting reference material
- Provide office hours for students to receive assistance with assignments and academic success coaching

Adjunct Professor – Norfolk State University – September 2023 – Present

- Provide online instruction for students in the CSC 200 (Advanced Computer Concepts) course and CSC 150 (Computer Literacy) course

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Software Developer (Mainframe) – BlueCross BlueShield of South Carolina – May 2023 – May 2024

- Analyzing systems specifications, application development and maintenance (coding, testing, debugging, documenting) to support Informational Systems processes.
- Maintain and modify programs according to specifications. Code, compile, and implement application software that is delivered on time and within budget. Evaluate basic interrelationships in immediate programming area to determine how changes in one program will affect another related area.
- Assist in the analysis of production system problems and in recommending workable solutions. Assist with performance monitoring.
- Make recommendations toward the development of new code or reuse of existing code.
- Develop JCL to test and execute programs

Technical Specialist, InMotion Hosting- July 2022-September 2022

- Provided Technical Support for Web Hosting Services
- Manage Linux Servers
- cPanel Management
- Responsible for managing shared servers and provided Tier I support on Shared Servers
- DNS Modifications, Domain Registration, MySQL/ MyPhpAdmin Management
- SSL Server Certificate Management

Computer Science/Math Instructor, Score at The Top Learning Centers and Schools – August 2021- January 2022

- Initiated, facilitated, and moderated computer science related course discussions in accordance of curriculum
- Planned designed and revised syllabi curriculum instruction content and other materials as required for AP Computer Science, C++ programming, Scratch Programming, and other computational/mathematical concepts.
- Provide computer science club with hands on software development projects to introduce them to game development
- Responsible for the following courses- Algebra 1, Algebra 2, College Readiness Mathematics, AP Calculus AB, AP Computer Science, AP CS (A), and High School Computer Science
- Responsible for engaging students in technological concepts and innovative technology
- Stayed abreast of advancements in computing technology programming and syntax
- Teaching students to understand and respect technology around them

Technical Specialist, InMotion Hosting- December 2017- March 2018

- Provided Technical Support for Web Hosting Services

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PC Technician (Spartan Technician) -Norfolk State University – March 2016 – October 2017

- Provided IT Help Desk Support in Lyman Beecher Brooks Library and Campus Employees/Staff/Students
- OTRS Ticketing System
- Responsible for managing Student Dormitory Computer Laboratory
- Provided hardware/software updates, replaced hardware (memory, NIC cards, etc.), surplus management, implement KACE server Images to deploy onto PC's, Active Directory, and Wireless Network Configurations

INTERNSHIP EXPERIENCE

Air Force Research Laboratory- Researcher (Griffiss Institute) – June 2021– December 2021 (Remote)

- Act as RI liaison to RH for CCOP Project
- Develop/define network owner domain and glossary
- Complete ontologies for data in data catalogue in java
- Develop SQARL Queries in java AFRL specialty syntax
- Develop turbines to transcribe Network Owner data and domain
- Responsible for identifying Human Factors Engineering portions in Cyber Protection Team Planning

Air Force Research Laboratory- AFRL Scholars (USRA) – June 2019 – August 2019

- SEL4 Microkernel Implementation on x86 Hardware with CAMKES VM
- Responsible for developing Ethernet Driver for CAMKES VM
- Responsible for configuring QEMU platform simulator to run CAMKES VM
- Implementing ROS on CAMKES VM with x86 hardware

Air Force Research Laboratory- Researcher (Griffiss Institute) – June – August 2018 Rome NY

- Designed and developed Main (White Team Game Board) Universal Windows Platform Application (UWP) for AFRL Phantom Arrow Gaming Project
- Phantom Arrow – AFRL Directorate Project to use Air Force Game Simulation to collect data on user ability to understand technology developed by Scientist for Air Force War Fare.
- Configured Raspberry Pi as Wireless Access Point (WAP) for Private Game Network + Node.js server. Socket Cluster Library for Internetwork communication from UWP Application.
- C#, XAML, and Java

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Lawrence Livermore National Laboratory, Cyber Defender – May- August 2017 Livermore, CA

- Responsible for designing and implementing two C++ light weight encryption algorithms - CLEFIA & TWINE (IoT Security)
- Analysis performance test of Light Weight Encryption Algorithms in low resource constrained environments – Energy Consumption, Encryption Speed, Execution Time, and CPU Cycles.
- Testing Environment: Arm 32 Cortex Microprocessor
- MBED Online IDE / Binary.exe

Sandia National Laboratories, Student Intern – May – August 2016 Albuquerque, NM

- Worked on a Team for developing SNL's Forensic Incident Response Exercise
- Responsible for configuration of BRO Intrusion Detection System on Virtual Network
- Developed bash scripts for monitoring incoming network traffic
- Kali Linux + Metasploit for developing malware exploits and reverse tcp links
- Utilized Wireshark to analyze network traffic and for malware detection
- Implemented SPLUNK to analyze script data

RESEARCH PROJECTS

Unity Game Development

CSET Undergraduate Symposium NSU, Poster

Developed an Information Assurance K-8 educational game that concentrated on three main areas in Cyber Security; Internet Safety, Password Security, and Identity Theft. The game was engineered utilizing the Unity Gaming Engine 5.0 which required C# for development. The game aimed to inform users on general internet safety habits and overall ethics in computing.

Cyber Security Education I

CISEE Conference, Poster

Analyzed the current state of the art in online cyber security games by interfacing and interacting with a predefined set of online cyber security games. Utilized a specialized gaming criteria to assess' educational materials. Each game was assessed against the criteria to measure overall clarity, flow, balance, length, integration, and fun. Conclusions were then drawn based upon that evaluation about the overall usefulness of cyber security learning and data was organized for according to age, cyber focus, and effectiveness.

Cyber Security Education II

IA-REDI, Researcher

Developed educational digital forensic learning framework for areas such as malware analysis, logical data extraction, reverse engineering, steganography, HEX Analysis, and Assembly level debugging. This project required conducting background research in relevant forensic tools in industry and cyber security research to cultivate a learning module for IA-REDI cyber students.

Data Mining

Norfolk State University- Department of Engineering, Research Project

Adaptive Windows Sampling Data Mining project to understand network traffic data in real time environments for network management. This project used Python as a method to visualize fuzzy logic and linear predictions. I conducted research in adaptive sampling for high performance networks and developed a supplemental program to implement the adaptive windows sampling

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algorithm.

Exploiting Vulnerabilities Bluetooth

2018 ADMI Conference, Poster

This project was focused on exposing vulnerabilities in the Bluetooth protocol stack by mobilizing (portable) Raspberry Pi 4 microprocessor with Kali Linux OS. The Blue Snarfer software and Linux built-in Bluetooth control interface was combined to exploit local Bluetooth interfaces via MAC Addresses and SDP. It was discovered that Session Description Protocol (SDP) transmission data and session information promotes a vulnerability in the Bluetooth protocol stack.

Human Psychology and Password Security

Master's Thesis Defense, Thesis Paper

Used quantitative research methods to understand the effects of password management on Human users and to analyze trade-off between Human memory limitations and password security. The data collected was assessed and measured to implement a Secure Android Mobile Password Manager (Android Studios) that aimed to introduce decentralized cloud blockchain as a form of storage while implementing a usable and secure user interface.

Fairness in AI

Independent Research, Paper

Algorithmic bias is a social issue that minorities and people of color are subjected to on the internet and in the real world. This research focuses on exploring open-source algorithm training data sets using NumPy and Skimage to search for ethnic and cultural diversity representation in data. This research aims to prove critical demand for cultural representation in dataset to mitigate the data representation gap. The end goal is to identify/validate problem and to create a clean, representative minority open source dataset for machine learning algorithms.

CERTIFICATIONS/CLEARNCES

Department of Defense (DOD) Clearance – Secret

August 2019 – October 2022

PUBLICATIONS/JOURNALS

Lee, W., [...], Carter, A. *et al.* (2016). ABQ ThunderBird Cup v3.0 Alpha Workshop: Workshop Analysis 2016. <https://doi.org/10.2172/1334945>

TUTORING EXPERIENCE

A2Z Tutoring Service LLC – Academic Tutor – August 2021 –Present

- Tutor for K – Calculus 2
- Tutor/Instructor for AP CSP, Programming Languages, Computer Organizations/Architecture, Software Development, Computer Literacy
- Responsible for providing a structural recovery plan to engage students and improve overall academic success

Norfolk State University – Teaching Assistant – September 2018 - April 2019

- Tutor for CSC 170/ CSC 260 – Introduction to C++ Programming (Undergraduate Level)
- Unix/C Programming Tutor (Undergraduate Level)

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- Responsible for grading assignments, managing student information, assisting in the classroom, and providing tutoring

PCG Education Services (University Instructors)- November 2018 - June 2019

- Algebra Readiness Tutor at Simonsdale Elementary School, Portsmouth VA
- Responsible for tutoring 6th grade students in Algebraic concepts
- In class room assistance and preparation of lesson plans for pre-algebra concepts

Keystone Education Services – Tutor- November 2017- March 2018

- Tutor for Algebra 1 – Calculus 2 (High School Students)

Norfolk State University – Tutor – January – March 2018

- Tutor for Algebra 1- Calculus 2 (Undergraduate Students)
- Tutor for Computer Science (CSC) 100-400 , C++ , Data Structures, Computer Network Defense, Unix/C Programming

ACHIEVEMENTS

National Nuclear Security Administration Scholar	September 2016-May 2018
Deans Scholar	August 2014-May 2018 ‘
Massie Grant Scholar	January 2015-June 2016
Altria Scholarship Recipient	September 2016
Microsoft Scholarship Recipient	March 2017
EWB Black Hat Scholarship Recipient	July 2017
3 rd Place Research Award ADAMI Conference	April 2018
Computer Science Graduate Student of the Year	April 2019-April 2020
Blacks in AI Scholarship Recipient	December 2019
Grace Hopper Scholarship Recipient	September 2019

VOLUNTEER/PROFESSIONAL DEVELOPMENT

Richland Library – Main	March 2024 – Present
Computer Course Volunteer	
Norfolk State Alumni Association	July 2021 – Present
Association for Computing Machinery	September 2016 - 2018
President – (Norfolk State Chapter)	
General Member	
National Society of Blacks in Computing	July 2018 - Present
Capture the Flag Coordinator/General Member	
Black Leadership Committee - Sandia National Labs	June 2016 - Sept. 2019
Community Outreach Coordinator	
Norfolk State Leadership Academy	August 2014 - March 2015
Organize and plan community service events to uplift the Universities student community	
Information Assurance Research Development Institute (IA-REDI)	January 2015-May 2018
Specialized Research Institute for Professional Development in Cyber Security	
Linux Bootcamp NCAT	March 2016
Graduate Student Association	March 2018 – March 2019
Community Outreach Coordinator	
Black ComputeHER Fellowship Program	May 2020 - March 2021
Dominion Enterprises HACK U5	

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ODU Hackathon

Cyber Fusion Hackathon

Norfolk State Cheerleading Squad – Team Member

Calvary Towers - Basic Computer Literacy Lessons to Disabled Adults - Volunteer

COE Python Bootcamp Norfolk State University - Teaching Assistant - Volunteer

HMTech Sandia National Laboratories Initiative– Albuquerque High School 2016

HMTech Sandia National Laboratories Initiative– Albuquerque High School 2019

Hour of Code (I.C. Norcom High School) - 2016 - Volunteer

Hour of Code Event at Berkley Campostella Early Childhood Center – 2017 - Volunteer