



Senior Portfolio

RICHARD
FLORES

MARYMOUNT UNIVERSITY

GRADUATING FALL 2025

B.S. INFORMATION TECHNOLOGY

MILITARY SERVICE



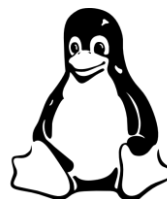
U.S. AIR FORCE



TRANSFERABLE SKILLS



TECHNICAL SKILLS



Linux
Tools



Biometrics



Physical
Pentest



L3HARRIS
Radio
Cryptography



Report
Writing

ACADEMIC PROGRESS



A.S. Information Technology

Graduated Fall 2023, Cum Laude



RELEVANT COURSES:

Network Communication-Security-Authentication
Network Security Basics
Computer Science I
Scientific Programming
Programming Tools
Microcomputer Operating Systems
Personal Computer Hardware and Troubleshooting
Introduction to Telecommunications
Spreadsheet Software
Intro. to Digital & Information Literacy & Computer Apps.
Introduction to Human Communication

RECOGNITIONS:

Presidential Scholars List, Fall 2023
Presidential Scholars List, Spring 2023
Dean's List, Fall 2022

ACADEMIC PROGRESS



MARYMOUNT
UNIVERSITY

SPRING 2024 (01/08/2024 to 05/04/2024)					
IT	210	SOFTWARE ENGINEERING	3.00	A	12.00
MGT	123	THE BUSINESS EXPERIENCE	3.00	A	12.00
TRS	100	THEOLOGICAL INQUIRY	3.00	A	12.00
IT	129	PYTHON SCRIPTING	3.00	A	12.00
IT	323	JUNIOR IT SEMINAR	1.00	A	4.00
MA	132	STATISTICAL ANALYSIS	3.00	A	12.00
Term GPA 4.000			Credit 16.00		
Cum GPA 4.000			Credit 100.00		
Dean's List					

CONTINUED ON TOP OF NEXT COLUMN

B.S. Information Technology

Minors: Cybersecurity, Digital
Forensics, & Network Security



RELEVANT COURES:

Cybersecurity-Attack & Defend *(registered)*

Corporate Cybersecurity *(registered)*

Software Testing and Quality Assurance *(in progress)*

Software Engineering

Advanced Python Applications *(registered)*

Python Scripting

Database Technology *(in progress)*

Cloud Computing *(in progress)*

rmfloresii.github.io

Statistical Analysis

Project Management *(in progress)*

Cyberethics *(registered)*

IT Internship *(in progress)*

Capstone Project *(registered)*



INTERNSHIP:

Cybersecurity Research Assistant

Automated Red Team

Infrastructure Deployment

RECOGNITIONS:

Dean's List, Spring 2024

CERTIFICATIONS

CompTIA

CompTIA

A+ (RFQZ0K7Z22Q1QLWY)
Security+ (GXDHFHZYN2EE1090)
Cybersecurity Analyst CySA+ (GK9DW3LTBJVQQG58)
Security Analytics Professional
verify.CompTIA.org

(ISC)²

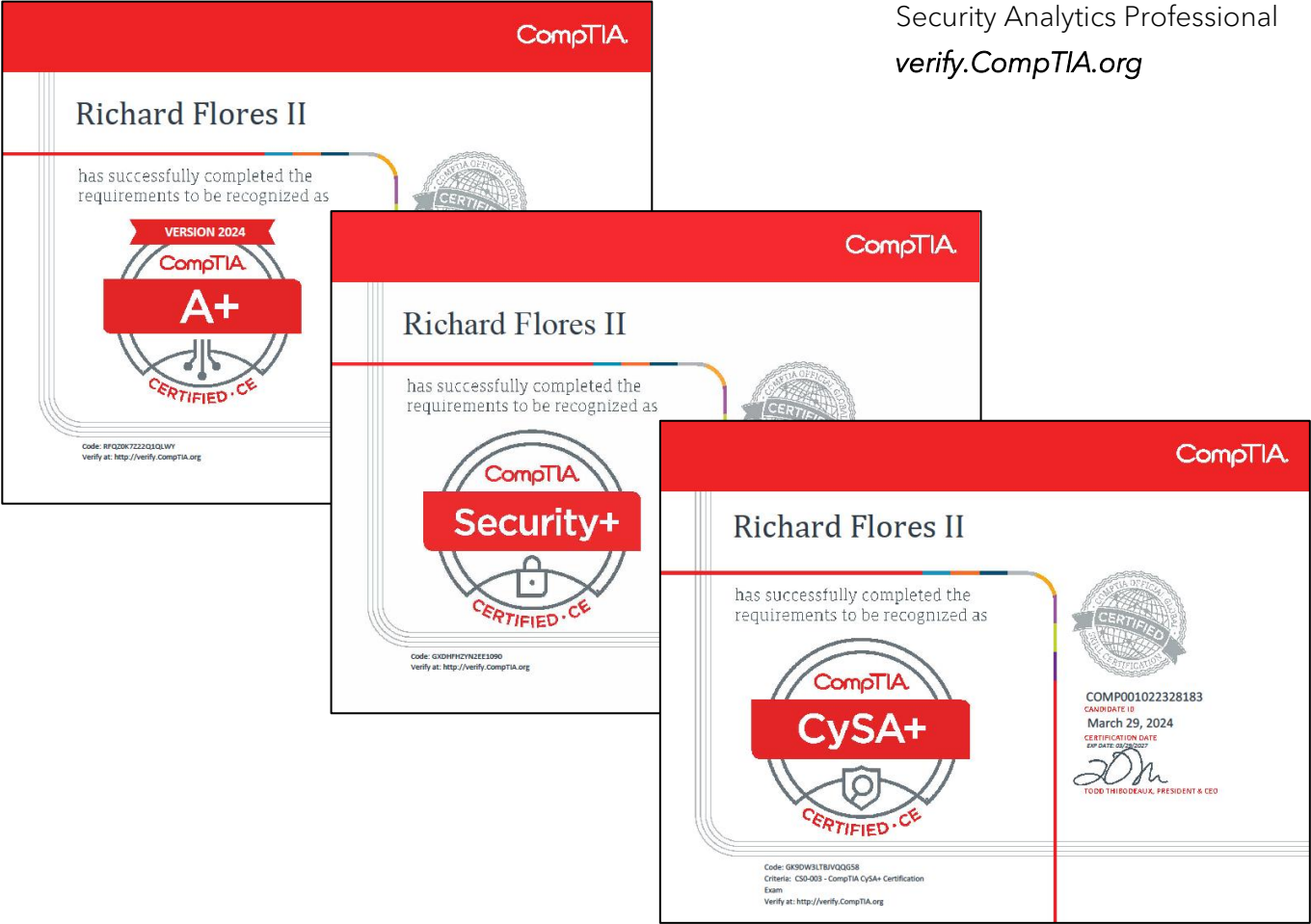
ISC²

Certified in Cybersecurity CC (061397)
isc2.org/MemberVerification

CTIA
Certification

CTIA

Wireless Industry Service Excellence (WISE) Lvl. I
WISE Lvl. II (21854)
ctiacertification.org



TECHNICAL WORKSHOPS



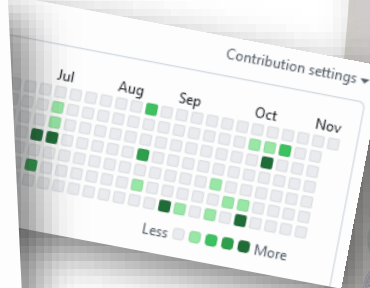
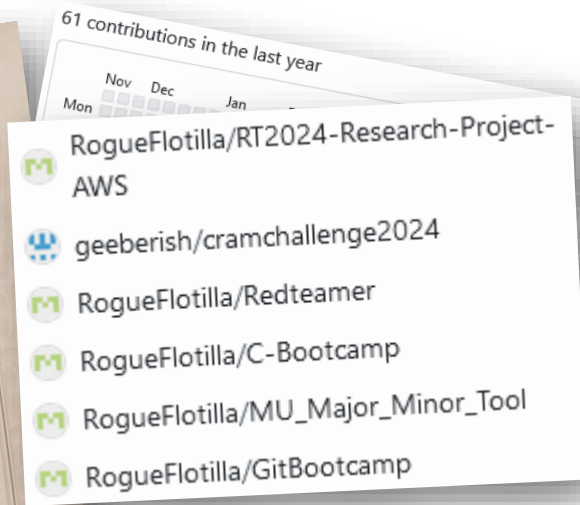
C Programming
Language



Git / Github



Ruby on Rails



SAMPLES OF WORK: DIGITAL FORENSICS

1

LAB REPORT Project Questions to Answer 2012 National Gallery DC Attack

Richard Flores
Northern Virginia Community College
ITN 262 01YA
Prof. "Michael" Hon
December 4, 2023

LAB REPORT: Project Questions to Answer

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E. Map showing plots of photo locations and other GPS data from navigation and browsing history. (DOUBLE CLICK TO OPEN AND SEE PLOTS)



REPORT: Project Questions to Answer

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Majavian Artwork (Alex/Cary)

- A. Perry Patsum asks King for help with the heist and threatens/blackmails King to get his parole officer to drug test if he doesn't help.

See file 8 Jul 2012 11:49:31 - 0400
Message: [redacted]
From: [redacted] <[redacted]@gmail.com>
To: [redacted] <[redacted]@gmail.com>
Subject: [redacted]

- B. King agrees to help and needs some supplies.

Tracy Phone



LAB REPORT: Project Questions to Answer

2

I. Summary

This report covers a period of time between approximately July 6, 2012, to July 15, 2012, involving two separate crime plots intermingled together due to the connection of one person, Tracy (a.k.a. Coral), in both conspiracies. Tracy is a divorced mother of one who is having financial struggles and is likely unable to continue affording the private school her daughter, Terry, attends. She has asked her ex-husband, Joe, for assistance, but he has made no commitments to help.

Some memorandums involving shipping details and insurance for a stamp display coming to the DC Art Gallery have come across Tracy's desk, and she becomes aware of their value. She enlists the assistance of her brother, Pat (a.k.a. Perry), and a police detective, who is willing to assist his sister in the planning of the theft of the stamps. Pat recently caught a parolee, king, in violation of his parole. King now owes Pat a favor, so he is blackmailed into helping as the robber for the plot.

The second plot involves a group of Krasnovians and Krasnovian sympathizers who plan on defacing a Majavian art display at the art gallery. Carry (a.k.a. Cat) is contacted by her "uncle" (family friend), Alex, and both start planning for the attack on the art display. Alex is sending several Krasnovian militants to the US to assist Carry in the plot. Carry sends some files to assist in the forgery of ePassports to get them into the country. She is coordinating with a flash mob coordinator, Drex Mustafar (a.k.a. Mike), who is likely one of the Krasnovian militants. It is unclear if they are going to use a flash mob as a distraction, or if this is merely a codeword for the attack. Carry enlists Tracy's help in smuggling her tablet into the art gallery which is used to transport details of the security, events, locations, and images from the art gallery.

LAB REPORT: Project Questions to Answer

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D. Tablet Photos Timeline (locations determined using names/addresses within photos themselves, Google Lens image search, and Google Street View tracking between identified locations on either side of photo).

- a. Carry meets someone for dinner at Firehook Bakery on July 6th. This does not match up with the time Tracy met her brother for lunch on July 6th. Could be a meeting for the defacement plot.
- b. There are photos of security cameras the morning of Carry transferring the tablet to Tracy. Perhaps scoping out the outside security? There was no identifiable information or GPS data to pin down the location.
- c. There are photos from Roaches run contained on the tablet the day after it was smuggled into the Gallery. Either the Shien person is another accomplice, or an alias of Carry and Tracy was returning the tablet to her there.

Photo	Location	Timestamp
	Crate & Barrel 2800 Clarendon Blvd Arlington, VA 22201	July 7, 2012 5:49 PM
	Firehook Bakery 1909 Q. St. NW Washington, DC 20009	July 8, 2012 5:31 PM

get for the guy that's going to make our job happen
Message: [redacted]
From: [redacted] <[redacted]@hotmail.com>

LAB REPORT: Project Questions to Answer

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III. People

1. A spreadsheet compiled of data of all the people involved.

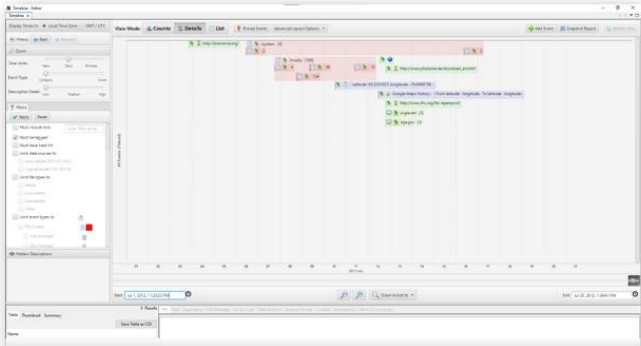
Name	Description
Alie J.	Wealthy Krasnovian
Carry Summa a.k.a. "Cat"	Krasnovian supporter in
Drex Mustafar a.k.a. "Mike"	Suspected Krasnovian
Patsum Shien ?	Possible Krasnovian in
King	Criminal, busted by
Perry Patsum a.k.a. "Pat"	Tracy's brother, Police
Tracy Summa a.k.a. "Coral"	Supervisor at National &
Tracy Summa	Tracy's Daughter
Joe Summa	Tracy's husband
James ?	Who is James?

Flores, Richard_Proj
out People.xlsx

LAB REPORT: Project Questions to Answer

39

F. Timeline from Autopsy of flagged material/items/events.



SAMPLES OF WORK: UNIT TESTING

```
calculateBtn = driver.find_element(By.XPATH, calculateBtnXpath)
```

- ✓ Test Valid Private IP address

```
selectSubnetFile
ipv4Field.clear
ipv4Field.send_
calculateBtn.cl
ipv4AddressXpat
networkAddressX
usableHostsXpat
ipv4Address = d
networkAddress
usableHosts = d
```

Print out

```
testResult = "P"
print(f'Entered')
print(f'\nNetwork')
print(f' Network')
if networkAddress:
    print("PASS")
else:
    print("FAIL")
testResult =
print(f'\nNum U')
print(f'Usable')
print(f' Num U')
if usableHosts:
    print("PASS")
else:
    print("FAIL")
testResult =
print(f'\nCumulative')
```

- ✖ Calculator.net Test Case 01: Calculate Valid Private IPv4

- Update apt cache and install pre-reqs

```
!apt-get update
!pip install selenium
!apt install chromium-chromedriver
```

- ✓ Load Selenium Web Driver

```
from selenium import webdriver
from selenium.webdriver.chrome.service import Service

chrome_options = webdriver.ChromeOptions()
chrome_options.add_argument('--window-size=2050,2050')
chrome_options.add_argument('--headless')
chrome_options.add_argument('--no-sandbox')
chrome_options.add_argument('--disable-dev-shm-usage')
driver = webdriver.Chrome(options=chrome_options)
```

- Define URL to test

```
base_url = "https://www.calculator.net/ip-subnet-calculator.html"
driver.get(base_url)
driver.title
```

- ✧ Import functions to locate form elements

```
testResult = "PASS"
print(f'Entered Address was: {ipv4Address}')
print(f'\nNetwork Address should be: 192.168.25.0')
print(f'Network Address calculated: {networkAddress}')
print(f' Network Address Result: ', end='')
if networkAddress == "192.168.25.0":
    print("PASS")
else:
    print("FAIL")
    testResult = "FAIL"
print(f'\nNum Usable Hosts expected: 254')
print(f'Usable Hosts calculated: {usableHosts}')
print(f' Num Usable Hosts Result: ', end='')
if usableHosts == "254":
    print("PASS")
else:
    print("FAIL")
    testResult = "FAIL"
print(f'\nCulmulative result of Test: {testResult}')
```

Entered Address was: 192.168.25.27

Network Address should be: 192.168.25.0

```
Network Address calculated: 192.168.25.0
```

Network Address Result: PASS

```
Num Usable Hosts expected: 254
```

```
Usable Hosts calculated: 254
```

```
Num Usable Hosts Result: PASS
```

Culmulative result of Test: PASS



Bonsu, Flores, Karki 1

Nana Bonsu, Richard Flores, Shushil Karki
Dr. Alex Mbaziira
IT 355 A
November 9, 2024

I. INTRODUCTION

Calculator.net is a website that provides online access to a scientific calculator for traditional calculations, as well as a comprehensive repository of over 200 specialized calculators for finance, fitness, health, math, and other fields. From a password generator that is useful for creating strong, random passwords based on rules selected, to making conversions from kilometers to miles or celsius to fahrenheit, and even random dice rollers, most users will find something useful for their everyday lives or even just to play around with when bored. For the fields of computer science, information technology, cybersecurity, and other related computer or technology fields, users will likely find the IP Subnet, Password, Binary, Hex, and Bandwidth calculators most useful. For the purposes of this test case report, the IP Subnet Calculator will be the primary focus of test cases generated and conducted.

II. TEST ENVIRONMENT

These tests are to be performed within a variety of web browsers in order to conduct comprehensive evaluation of the website and its functions, and on a variety of platforms. Testers use a variety of devices, including Windows PCs, Macbooks, Android, and Apple iOS cellphones. On these devices, web browsers range from Firefox on Windows, to Chrome on Android, to Safari on Mac. Automation of testing will

- ▼ Import functions to locate form elements

```

[4] from selenium.webdriver.common.by import By
     from selenium.webdriver.support.ui import Select

     subnetFieldXpath = '//*[@id="csubnet"]'
     ipv4FieldXpath = '//*[@id="cip"]'
     calculateBtnXpath = '/html/body/div[3]/div[1]/div'
     subnetField = driver.find_element(By.XPATH, subnet
     selectSubnetField = Select(subnetField)
     ipv4Field = driver.find_element(By.XPATH, ipv4Field
     calculateBtn = driver.find_element(By.XPATH, calcul

```

- ✓ Test Valid Private IP address

```
selectSubnetField.select_by_visible_text("255.255.255.255")
ipv4Field.clear()
ipv4Field.send_keys("192.168.25.27")
calculateBtn.click()
ipv4AddressXpath = '/html/body/div[3]/div[1]/table[1]/tr/td[1]'
networkAddressXpath = '/html/body/div[3]/div[1]/table[1]/tr/td[2]'
usableHostsXpath = '/html/body/div[3]/div[1]/table[1]/tr/td[3]'
ipv4Address = driver.find_element(By.XPATH, ipv4AddressXpath)
networkAddress = driver.find_element(By.XPATH, networkAddressXpath)
usableHosts = driver.find_element(By.XPATH, usableHostsXpath)
```



SAMPLES OF WORK: CYBERSECURITY ASSESSMENT

```
calculate_modified_scores.py > ...
338 if __name__ == "__main__":
339     with open('./sue_data/json_data/individual_files_archive/combined_vulnerabilities_data_file.json') as detected_vulnerabilities_data_file:
340         combined_vulnerabilities_data = json.load(detected_vulnerabilities_data_file) # manually load combined_vulnerabilities_data
341         cves = set([item["CVE Number"] for item in combined_vulnerabilities_data]) # disting set of detected CVE's
342         with open('./sue_data/json_data/individual_files_archive/node_criticality_mapping_file.json') as node_criticality_mapping_file:
343             node_criticality_mapping = json.load(node_criticality_mapping_file) # manually load node_criticality_mapping
344         system_evaluation_scores = { # simulate being passed the 3P's
345             'personnel_score': 0.45,
346             'physical_security_score': 0.5,
347             'policies_score': 0.55
348         }
349         apt_cve_evaluation_scores = {} # create empty dictionary for LLM APT score metrics
350
351     for cve in cves:
352         cve_number = cve # simulate CVE being analyzed against APT data
353         apt_score = .52 # simulate creating LLM apt score for specified CVE
354         reasoning = "reasoning ... .. blah blah blah ... APT's BAD!!!" # simulate creating LLM reasoning
355         dictionary = {'apt_score': apt_score, 'reasoning': reasoning} # build sub-dictionary
356         apt_cve_evaluation_scores[cve_number] = dictionary # append sub-dictionary to dictionary
357
```



Challenge Solution Verification Test Method

Once code development was complete, we integrated the code with all three Python coders performing a code review and merging selected files / lines of code into a final testing branch, followed by test runs of the code to check for integration errors, functionality discrepancies, and ensure consistent, repeatable scoring.

APT3, Gothic Panda, China		
RUN TIMES	ENV	APT
2 min 3 sec	7.8	7.0
2 min 8 sec	7.8	7.1
2 min 13 sec	7.9	7.1

APT37, Reaper, North Korea		
RUN TIMES	ENV	APT
1 min 59 sec	7.7	6.2
2 min 8 sec	7.8	6.4
2 min 9 sec	7.7	6.4

	Base	Temporal	Environmental	APT Threat Index
CVE Number	9.1	5.8	5.0	9.9
CVE-2023-20269	5.8	4.3	8.4	6.9
CVE-2023-20256	4.3	6.3	10.0	5.2
CVE-2023-20247	6.3	8.6	6.7	8.5
CVE-2023-20200	8.6	6.7	7.8	10.0
CVE-2023-20095	6.7	7.8	8.3	6.9
CVE-2023-20015	7.8	6.5	8.0	7.9
CVE-2023-20934	6.5	7.7		8.4
CVE-2018-0284	7.7			8.1
CVE-2014-7999				

3P's, ACRES (Physical, Personnel, Policies)

PSS = Physical Security Score: 0 to 1, **PTS** = Personnel Training Score: 0 to 1, **OPS** = Operating Policies Score: 0 to 1

Environmental Score, CVSSv3.1

If **mScope** is UNCHANGED:

$\text{Ceiling}[\text{Ceiling}(\text{Min}[(\text{mImpact} + \text{mExploitability}), 10]) \times \text{CodeMaturity} \times \text{RemedLevel} \times \text{ReportConf}]$

If **mScope** is CHANGED:

$\text{Ceiling}[\text{Ceiling}(\text{Min}[1.08 \times (\text{mImpact} + \text{mExploitability}), 10]) \times \text{CodeMat} \times \text{RemedLevel} \times \text{ReportConf}]$

Modified Impact Sub Score (mImpact)

$\text{Min}[(1 - [1 - \text{mImpConf} \times \text{ConfReq}] \times [1 - \text{mImpInt} \times \text{ImpReq}] \times [1 - \text{mImpAvail} \times \text{AvailReq}]), 0.915]$

where **ConfReq**, **ImpReq**, **AvailReq** = Node Criticality Rating...LOW: 1, MEDIUM: 2, or HIGH: 3

Modified Exploitability Sub Score (mExploitability)

$8.22 \times \text{mAttackVector} \times \text{mAttackComplexity} \times \text{mPrivilegeRequired} \times \text{mUserInteraction}$

where **mAttackVector** = NETWORK: 0.85, ADJACENT: 0.62, LOCAL: 0.55 - $\text{Ceil}^{100}(\frac{\text{PSS}-0.5}{10})$, PHYSICAL: 0.20 - $\text{Ceil}^{100}(\frac{\text{PSS}-0.5}{5})$

where **mAttackComplexity** = (HIGH: 0.44, LOW: 0.605, NONE: 0.77)

where **mPrivilegeRequired** = (HIGH: 0.27|0.50, LOW: 0.62|0.68, NONE: 0.85|0.85) ^{SCOPE UNCHANGED|CHANGED}

where **mUserInteraction** = NONE: 0.85, REQUIRED: 0.62 - $\text{Ceil}^{100}(\frac{\text{PTS}-0.5}{2.5})$ - $\text{Ceil}^{100}(\frac{\text{OPS}-0.5}{5})$

APT Threat Index Score, ACRES

If **modifier** < 0: $\text{Ceiling}[\text{EnvironmentScore} + (\max[\text{modifier}, -3.3] \times [(\text{aptScore} \times 2) - 1])]$

Else: $\text{Ceiling}[\text{EnvironmentScore} + (\min[\text{modifier}, +3.3] \times [(\text{aptScore} \times 2) - 1])]$

where **modifier** = $\text{abs}(10 - \text{EnvironmentScore})$

3P's assigned by Llama 3.1:70b after generalizing JSON representations of system summaries and comparing to security best practices provided by the NIST Notional CSF 2.0 Profile Template.

APT Score is assigned per vulnerability by Llama 3.1 after generalizing CVE description and APT TTP's and summaries from <https://apt.threattracking.com/>.

Sources:
nist.gov/cyberframework/profiles
apt.threattracking.com

EXTRACURRICULAR ENGAGEMENT



Challenges
Cyber Resiliency
and Measurement
Challenge

Student Government Senator, 2004 - 2005 Budget Committee



Summer Camps
DC Public Schools
GenCyber

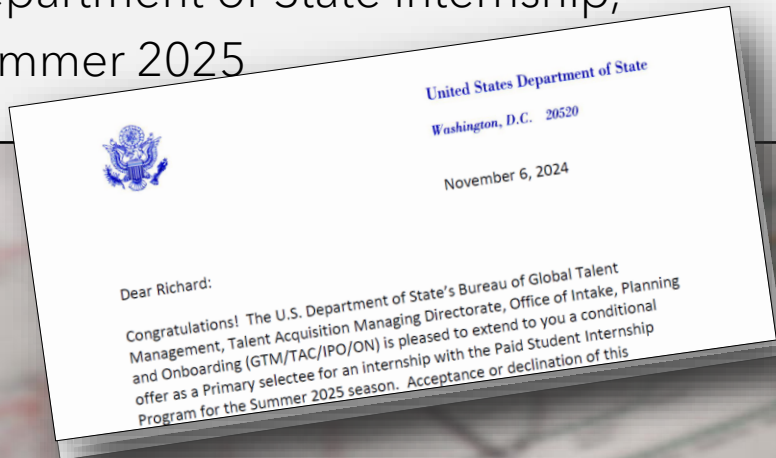


Clubs
Intelligence Club, Cyber
Club, Food for Thought,
WiCyS, Grit & Grime
League

FUTURE PLANS

SHORT TERM

- Current internship extending through February 2025 for publishing work
- Received conditional offer for Department of State internship, Summer 2025



LONG TERM

- Graduating Fall 2025
- Continuing with M.S. Cybersecurity
- Seeking Government employment



CONTACT INFORMATION

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GitHub: github.com/RogueFlotilla

Portfolio: rmfloresii.github.io

Thank You