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CYBER SKYLINE

The National Cyber League
A Community Where Cybersecurity Is a Passion

Harun Adiyaman
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NCL Fall 2021 Individual Game Scouting Report

Dear Harun Adiyaman,

Thank you for participating in the National Cyber League (NCL) 2021 Fall Season! Our goal is to prepare the next generation of cybersecurity professionals, and your participation is helping achieve that goal.

The NCL was founded in May 2011 to provide an ongoing virtual training ground for collegiate students to develop, practice, and validate their cybersecurity skills in preparation for further learning, industry certifications, and career readiness. The NCL scenario-based challenges were designed around performance-based exam objectives of CompTIA certifications and are aligned to the National Initiative for Cybersecurity Education (NICE) Cybersecurity Workforce Framework published by the National Institute of Standards and Technology (NIST).

As you look to a future career in cybersecurity, we hope you find this report to be valuable in both validating skills and identifying areas for improvement across the nine NCL skills categories. You can use this NCL Scouting Report to:

- Validate your skills to employers in any job application or professional portfolio;
- Show case your achievements and strengths by including the Score Card view of your performance as part of your résumé or simply sharing the validation link so that others may view the detailed version of this report.

The NCL 2021 Fall Season had 7,130 students/players and 491 faculty/coaches from more than 500 two- and four-year schools & 70 high schools across all 50 U.S. states registered to play. The Individual Game Capture the Flag (CTF) event took place from October 22 through October 24. The Team Game CTF event took place from November 5 through November 7. The games were conducted in real-time for students across the country.

NCL is powered by Cyber Skyline's cloud-based skills evaluation platform. Cyber Skyline hosted the scenario-driven cybersecurity challenges for players to compete and track their progress in real-time.

To validate this report, please access: cyberskyline.com/report/2ARFG5UQYXCH

Congratulations for your participation in the NCL 2021 Fall Individual Game! We hope you will continue to develop your knowledge and skills and make meaningful contributions as part of the Information Security workforce!

David Zeichick
NCL Commissioner

NATIONAL CYBER LEAGUE SCORE CARD

NCL 2021 FALL INDIVIDUAL GAME

YOUR TOP CATEGORIES

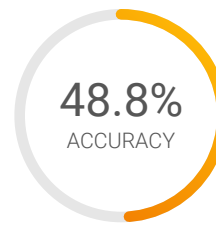| LOG ANALYSIS		
87TH PERCENTILE		
	ENUMERATION & EXPLOITATION	
	86TH PERCENTILE	
		WEB APPLICATION EXPLOITATION
		84TH PERCENTILE

NATIONAL RANK
1341ST PLACE OUT OF 6480

PERCENTILE
80TH

48.8%
ACCURACY
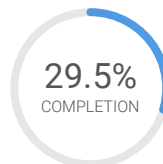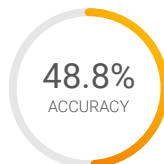
Average: 65.3%

cyberskyline.com/report
ID: 2ARFG5UQYXCH

NCL Fall 2021 Individual Game

The NCL Individual Game is designed for student players nationwide to compete in realtime in the categories listed below. The Individual Game evaluates the technical cybersecurity skills of the individual, without the assistance of others.

1341 ST PLACE OUT OF **6480**
NATIONAL RANK

80th National Percentile

670 POINTS OUT OF 3000
PERFORMANCE SCORE

Average: 698.4 Points

48.8% ACCURACY

Average: 65.3%

29.5% COMPLETION

Average: 31.0%

Cryptography

145 POINTS OUT OF 330 — **71.4%** ACCURACY — COMPLETION: **62.5%**

Identify techniques used to encrypt or obfuscate messages and leverage tools to extract the plaintext.

Enumeration & Exploitation

20 POINTS OUT OF 320 — **66.7%** ACCURACY — COMPLETION: **33.3%**

Identify actionable exploits and vulnerabilities and use them to bypass the security measures in code and compiled binaries.

Forensics

100 POINTS OUT OF 300 — **100.0%** ACCURACY — COMPLETION: **40.0%**

Utilize the proper tools and techniques to analyze, process, recover, and/or investigate digital evidence in a computer-related incident.

Log Analysis

90 POINTS OUT OF 340 — **21.9%** ACCURACY — COMPLETION: **36.8%**

Utilize the proper tools and techniques to establish a baseline for normal operation and identify malicious activities using log files from various services.

Network Traffic Analysis

0 POINTS OUT OF 355 — **0.0%** ACCURACY — COMPLETION: **0.0%**

Identify malicious and benign network traffic to demonstrate an understanding of potential security breaches.

Open Source Intelligence

145 POINTS OUT OF 300 — **55.6%** ACCURACY — COMPLETION: **55.6%**

Utilize publicly available information such as search engines, public repositories, social media, and more to gain in-depth knowledge on a topic or target.

Password Cracking

45 POINTS OUT OF 320 — **100.0%** ACCURACY — COMPLETION: **27.3%**

Identify types of password hashes and apply various techniques to efficiently determine plaintext passwords.

Scanning & Reconnaissance

0 POINTS OUT OF 310 — **0.0%** ACCURACY — COMPLETION: **0.0%**

Identify and use the proper tools to gain intelligence about a target including its services and potential vulnerabilities.

Web Application Exploitation

25 POINTS OUT OF 325 — **33.3%** ACCURACY — COMPLETION: **14.3%**

Identify actionable exploits and vulnerabilities and use them to bypass the security measures in online services.

Note: Survey module (100 points) was excluded from this report.

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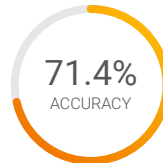
Cryptography Module

Identify techniques used to encrypt or obfuscate messages and leverage tools to extract the plaintext.
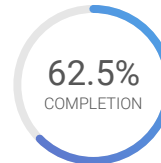
1175 TH PLACE OUT OF **6480**
NATIONAL RANK

82nd National Percentile

145 POINTS OUT OF 330
PERFORMANCE SCORE

Average: 134.1 Points

71.4% ACCURACY

Average: 85.2%

62.5% COMPLETION

Average: 53.1%

TOP NICE WORKROLES
Security Control Assessor
Secure Software Assessor
Exploitation Analyst
Cyber Operator
Security Architect

Decoding 1 (Easy)	45 POINTS OUT OF 45	80.0% ACCURACY	COMPLETION:	100.0%

Identify the type of base encoding used and decode the data

Decoding 2 (Easy)	30 POINTS OUT OF 30	100.0% ACCURACY	COMPLETION:	100.0%

Identify the cipher scheme used and decrypt the data

Decoding 3 (Easy)	20 POINTS OUT OF 20	100.0% ACCURACY	COMPLETION:	100.0%

Identify the cipher scheme used and decrypt the data

Decoding 4 (Medium)	0 POINTS OUT OF 35	0.0% ACCURACY	COMPLETION:	0.0%

Identify the alphabet encoding used and decode the data

Decoding 5 (Hard)	0 POINTS OUT OF 50	0.0% ACCURACY	COMPLETION:	0.0%

Exploit an RSA implementation and extract the sensitive data that was encrypted

Steg (Easy)	20 POINTS OUT OF 20	50.0% ACCURACY	COMPLETION:	100.0%

Identify the steganography technique used and extract the hidden data

Cyber Cat (Easy)	0 POINTS OUT OF 50	0.0% ACCURACY	COMPLETION:	0.0%

Identify the metadata and encoding used to hide data in an image file

SSL (Hard)	30 POINTS OUT OF 80	66.7% ACCURACY	COMPLETION:	66.7%

Parse through hundreds of SSL certificates to identify any invalid or improperly signed SSL certificates

POWERED BY CYBER SKYLINE

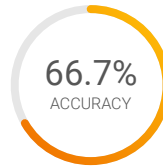# Enumeration & Exploitation Module

Identify actionable exploits and vulnerabilities and use them to bypass the security measures in code and compiled binaries.
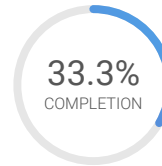
946 TH PLACE OUT OF **6480**
NATIONAL RANK

86th National Percentile

20 POINTS OUT OF 320
PERFORMANCE SCORE

Average: 55.0 Points

66.7% ACCURACY

Average: 43.1%

33.3% COMPLETION

Average: 32.2%

TOP NICE WORKROLES
Cyber Operator
Target Developer
Exploitation Analyst
Software Developer
Systems Security Analyst

Micro (Easy)

10 POINTS OUT OF 100 — **50.0%** ACCURACY — COMPLETION: **50.0%**

Analyze a Lua script source code & reverse engineer its functionality

Shinny (Medium)

10 POINTS OUT OF 100 — **100.0%** ACCURACY — COMPLETION: **50.0%**

Analyze an obfuscated Python program & reverse engineer its functionality

Rock (Hard)

0 POINTS OUT OF 120 — **0.0%** ACCURACY — COMPLETION: **0.0%**

Decompile and analyze a C++ binary file & reverse engineer its functionality

Forensics Module

Utilize the proper tools and techniques to analyze, process, recover, and/or investigate digital evidence in a computer-related incident.

1192 ND PLACE OUT OF **6480**
NATIONAL RANK

82nd National Percentile

100 POINTS OUT OF 300
PERFORMANCE SCORE

Average: 163.7 Points

100.0% ACCURACY

Average: 73.5%

40.0% COMPLETION
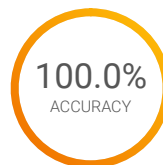
Average: 59.6%

TOP NICE WORKROLES
Cyber Defense Forensics Analyst
Cyber Crime Investigator
Cyber Defense Incident Responder
Cyber Defense Analyst

Archive (Easy)

100 POINTS OUT OF 100 — **100.0%** ACCURACY — COMPLETION: **100.0%**

Fix a corrupted rar file to recover the archive's original contents

Docter (Medium)

0 POINTS OUT OF 100 — **0.0%** ACCURACY — COMPLETION: **0.0%**

Identify and extract files hidden inside a Microsoft Word document file

Where in the World? (Hard)

0 POINTS OUT OF 100 — **0.0%** ACCURACY — COMPLETION: **0.0%**

Analyze the available information in a photograph to identify where the photo was taken
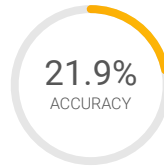
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Log Analysis Module

Utilize the proper tools and techniques to establish a baseline for normal operation and identify malicious activities using log files from various services.
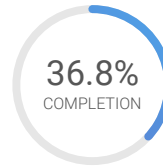
878 TH PLACE OUT OF **6480**
NATIONAL RANK

87th National Percentile

90 POINTS OUT OF 340
PERFORMANCE SCORE

Average: 103.9 Points

21.9% ACCURACY

Average: 42.9%

36.8% COMPLETION

Average: 35.2%

TOP NICE WORKROLES
Cyber Defense Analyst
Systems Security Analyst
All-Source Analyst
Cyber Defense Forensics Analyst
Data Analyst

Wild Web (Easy)
70 POINTS OUT OF 110 — **20.8%** ACCURACY — COMPLETION: **71.4%**

Analyze a web server's access logs to identify trends and suspicious access

Mountains (Medium)
20 POINTS OUT OF 100 — **25.0%** ACCURACY — COMPLETION: **40.0%**

Execute commands on an Alpine Linux server to identify installed packages

IDS (Hard)
0 POINTS OUT OF 130 — **0.0%** ACCURACY — COMPLETION: **0.0%**

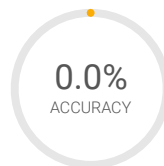Analyze an IDS log to identify indicators of compromise and attack signatures

Network Traffic Analysis Module

Identify malicious and benign network traffic to demonstrate an understanding of potential security breaches.
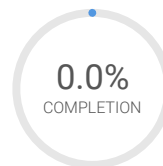
N/A
NATIONAL RANK

0 POINTS OUT OF 355
PERFORMANCE SCORE

Average: 121.8 Points

0.0% ACCURACY

Average: 65.0%

0.0% COMPLETION

Average: 41.2%

TOP NICE WORKROLES
Cyber Defense Analyst
All-Source Analyst
Cyber Defense Incident Responder
Target Network Analyst
Cyber Operator

FTP (Easy)
0 POINTS OUT OF 80 — **0.0%** ACCURACY — COMPLETION: **0.0%**

Analyze a capture of FTP traffic to identify user credentials and files accessed

Cracking (Medium)
0 POINTS OUT OF 55 — **0.0%** ACCURACY — COMPLETION: **0.0%**

Analyze and identify WiFi network metadata and crack the WiFi password

TV (Medium)
0 POINTS OUT OF 100 — **0.0%** ACCURACY — COMPLETION: **0.0%**

Analyze a websocket packet capture containing smart TV control commands

WiFi (Hard)
0 POINTS OUT OF 120 — **0.0%** ACCURACY — COMPLETION: **0.0%**

Identify the vulnerable data fields to exploit the 802.11 PMKID vulnerability and crack the WiFi network access password

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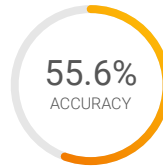
Open Source Intelligence Module

Utilize publicly available information such as search engines, public repositories, social media, and more to gain in-depth knowledge on a topic or target.

1422 ND PLACE OUT OF **6480**
NATIONAL RANK

79th National Percentile

145 POINTS OUT OF 300
PERFORMANCE SCORE

Average: 134.2 Points

55.6% ACCURACY

Average: 66.9%

55.6% COMPLETION

Average: 58.3%

TOP NICE WORKROLES
Systems Security Analyst
Target Developer
System Administrator
Research & Development Specialist
Cyber Intel Planner

Rules of Conduct (Easy)
15 POINTS OUT OF 15   **100.0%** ACCURACY   COMPLETION: **100.0%**

Introductory challenge on acceptable conduct during NCL

APTs (Easy)
30 POINTS OUT OF 30   **100.0%** ACCURACY   COMPLETION: **100.0%**

Identify attributes regarding popular Advanced Persistent Threats

Unknown Hash (Easy)
0 POINTS OUT OF 45   **0.0%** ACCURACY   COMPLETION: **0.0%**

Identify the protocol associated with a hash digest and its associated files

Hacker Location (Medium)
0 POINTS OUT OF 50   **0.0%** ACCURACY   COMPLETION: **0.0%**

Identify the location encoding scheme which uses only 3 words

Stolen Camera (Medium)
10 POINTS OUT OF 70   **100.0%** ACCURACY   COMPLETION: **25.0%**

Extract camera serial number from an image and identify stolen camera registries

Tom's Hotel (Hard)
90 POINTS OUT OF 90   **60.0%** ACCURACY   COMPLETION: **100.0%**

Identify attributes from a photo to pin point the location that the photo was taken

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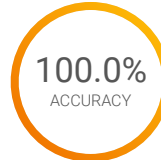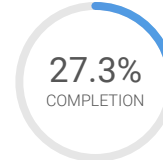# Password Cracking Module

Identify types of password hashes and apply various techniques to efficiently determine plaintext passwords.

1535 TH PLACE
OUT OF **6480**
NATIONAL RANK

77th National Percentile

45 POINTS
OUT OF 320
PERFORMANCE SCORE

Average: 94.4 Points

100.0%
ACCURACY

Average: 86.8%

27.3%
COMPLETION

Average: 43.0%

TOP NICE WORKROLES
Cyber Operator
Exploitation Analyst
Systems Security Analyst
Cyber Defense Incident
Responder
Cyber Crime Investigator

|			
Hashing (Easy)	**15** POINTS OUT OF 15	**100.0%** ACCURACY	COMPLETION: **100.0%**
Generate password hashes for MD5, SHA1, and SHA256			
Cracking 1 (Easy)	**30** POINTS OUT OF 30	**100.0%** ACCURACY	COMPLETION: **100.0%**
Crack MD5 password hashes			
Cracking 2 (Easy)	**0** POINTS OUT OF 30	**0.0%** ACCURACY	COMPLETION: **0.0%**
Crack Windows NTLM password hashes			
Cracking 3 (Medium)	**0** POINTS OUT OF 45	**0.0%** ACCURACY	COMPLETION: **0.0%**
Build a wordlist or pattern config to crack password hashes of a known pattern			
Cracking 4 (Hard)	**0** POINTS OUT OF 95	**0.0%** ACCURACY	COMPLETION: **0.0%**
Build a wordlist to crack passwords not found in common wordlists			
ZIP (Medium)	**0** POINTS OUT OF 30	**0.0%** ACCURACY	COMPLETION: **0.0%**
Crack the password of a ZIP archive file			
Kali Linux (Hard)	**0** POINTS OUT OF 75	**0.0%** ACCURACY	COMPLETION: **0.0%**
Crack the new yescrypt password hashes included in Kali Linux			

Scanning & Reconnaissance Module

Identify and use the proper tools to gain intelligence about a target including its services and potential vulnerabilities.
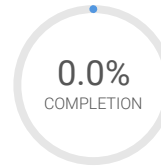
N/A
NATIONAL RANK

0 POINTS OUT OF 310
PERFORMANCE SCORE

0.0% ACCURACY

0.0% COMPLETION

Average: 104.1 Points
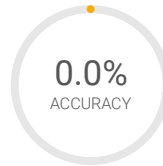
Average: 52.9%

Average: 36.4%

TOP NICE WORKROLES
Vulnerability Assessment Analyst
Target Network Analyst
Cyber Operations Planner
Target Developer
Security Control Assessor

Port Scan (Easy)
0 POINTS OUT OF 100 — **0.0%** ACCURACY — COMPLETION: **0.0%**

Perform a port scan and identify services running on a remote host

Treasure Hunt (Medium)
0 POINTS OUT OF 100 — **0.0%** ACCURACY — COMPLETION: **0.0%**

Perform a directory scan and identify hidden files on a remote HTTP server

Mail (Hard)
0 POINTS OUT OF 110 — **0.0%** ACCURACY — COMPLETION: **0.0%**

Perform a targeted service scan of a SMTP server to identify the names of users in the server directory
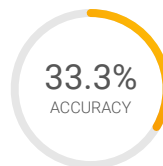
Web Application Exploitation Module

Identify actionable exploits and vulnerabilities and use them to bypass the security measures in online services.
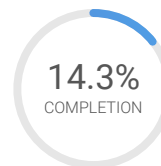
1101 ST PLACE OUT OF 6480
NATIONAL RANK

84th National Percentile

25 POINTS OUT OF 325
PERFORMANCE SCORE

33.3% ACCURACY

14.3% COMPLETION

Average: 66.5 Points

Average: 59.1%

Average: 30.2%

TOP NICE WORKROLES
Cyber Operator
Software Developer
Exploitation Analyst
Systems Security Analyst
Database Administrator

Storage (Easy)
0 POINTS OUT OF 100 — **0.0%** ACCURACY — COMPLETION: **0.0%**

Analyze source code on a web page and exploit local authentication measures

Pasta (Medium)
25 POINTS OUT OF 100 — **100.0%** ACCURACY — COMPLETION: **33.3%**

Exploit the backdoor vulnerability present in a Node-RED IOT control server

Leek (Hard)
0 POINTS OUT OF 125 — **0.0%** ACCURACY — COMPLETION: **0.0%**

Exploit the web server to obtain uninitialized server buffer memory and extract sensitive server-side data such as encryption keys