NCL Spring 2023 Individual Game Scouting Report

Dear Konner Sawyers,

Thank you for participating in the National Cyber League (NCL) 2023 Spring 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 2023 Spring Season had 7,820 students/players and 533 faculty/coaches from more than 450 two- and four-year schools & 250 high schools across all 50 U.S. states registered to play. The Individual Game Capture the Flag (CTF) event took place from March 31 through April 2. The Team Game CTF event took place from April 14 through April 16. 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/DHKMGMYNRLHN

Based on the the performance detailed in this NCL Scouting Report, you have earned **7 hours** of Continuing Education Units (CEUs) as approved by CompTIA. You can learn more about the NCL - CompTIA alignment via nationalcyberleague.org/comptia.

Congratulations for your participation in the NCL 2023 Spring Individual Game! We hope you will continue to develop your knowledge and skills and make meaningful contributions as part of the Information Security workforce!

Dr. David Zeichick
NCL Commissioner

NATIONAL CYBER LEAGUE SCORE CARD

NCL 2023 SPRING INDIVIDUAL GAME

YOUR TOP CATEGORIES

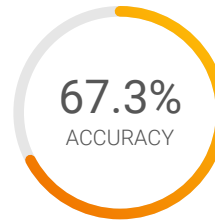**NATIONAL RANK**
460TH PLACE OUT OF 6273

PERCENTILE
93RD

WEB APPLICATION EXPLOITATION	SCANNING & RECONNAISSANCE	LOG ANALYSIS
98TH PERCENTILE	95TH PERCENTILE	93RD PERCENTILE

67.3%
ACCURACY

Average: 67.0%

cyberskyline.com/report
ID: DHKMGMYNRLHN

Learn more at nationalcyberleague.org | Get in touch with us via info@nationalcyberleague.org

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NCL Spring 2023 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.

460 TH PLACE OUT OF **6273**
NATIONAL RANK

93 rd National Percentile

1475 POINTS OUT OF 3000
PERFORMANCE SCORE

Average: 816.2 Points

67.3% ACCURACY

Average: 67.0%

65.5% COMPLETION

Average: 38.0%

Cryptography
105 POINTS OUT OF 360   **63.6%** ACCURACY   COMPLETION: **53.8%**

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

Enumeration & Exploitation
120 POINTS OUT OF 300   **58.3%** ACCURACY   COMPLETION: **77.8%**

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

Forensics
130 POINTS OUT OF 300   **50.0%** ACCURACY   COMPLETION: **44.4%**

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

Log Analysis
100 POINTS OUT OF 300   **38.5%** ACCURACY   COMPLETION: **45.5%**

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
190 POINTS OUT OF 370   **56.3%** ACCURACY   COMPLETION: **64.3%**

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

Open Source Intelligence
290 POINTS OUT OF 310   **85.0%** ACCURACY   COMPLETION: **89.5%**

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
185 POINTS OUT OF 360   **93.3%** ACCURACY   COMPLETION: **63.6%**

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

Scanning & Reconnaissance
145 POINTS OUT OF 300   **64.3%** ACCURACY   COMPLETION: **75.0%**

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

Web Application Exploitation
110 POINTS OUT OF 300   **100.0%** ACCURACY   COMPLETION: **50.0%**

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
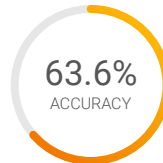
Identify techniques used to encrypt or obfuscate messages and leverage tools to extract the plaintext.
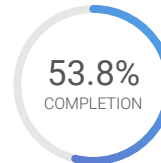
1133 RD PLACE OUT OF 6273
NATIONAL RANK

82 nd National Percentile

105 POINTS OUT OF 360
PERFORMANCE SCORE

Average: 115.0 Points

63.6% ACCURACY

Average: 77.2%

53.8% COMPLETION

Average: 52.7%

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

Decoding 1 (Easy)	30 POINTS OUT OF 30	100.0% ACCURACY	COMPLETION:	100.0%

Obtain plaintext from messages encoded with common number bases

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

Analyze and obtain the plaintext for a message encrypted with a shift cipher

Decoding 3 (Medium)	25 POINTS OUT OF 25	100.0% ACCURACY	COMPLETION:	100.0%

Obtain the plaintext of a message using charcode encoding

Rolling (Medium)	20 POINTS OUT OF 50	20.0% ACCURACY	COMPLETION:	33.3%

Analyze the cryptographic weakness of a ECB encrypted image

PGP (Medium)	0 POINTS OUT OF 75	0.0% ACCURACY	COMPLETION:	0.0%

Decrypt a PGP message and encrypt a PGP message using provided keys

AES (Hard)	0 POINTS OUT OF 75	0.0% ACCURACY	COMPLETION:	0.0%

Decrypt an AES encrypted message by exploiting an insecure key generation

Steg (Hard)	0 POINTS OUT OF 75	0.0% ACCURACY	COMPLETION:	0.0%

Recover the plaintext of a message that was hidden using LSB steganography

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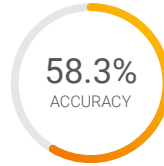
Enumeration & Exploitation Module

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

736 TH PLACE OUT OF **6273**
NATIONAL RANK

89th National Percentile

120 POINTS OUT OF 300
PERFORMANCE SCORE

Average: 98.8 Points

58.3% ACCURACY

Average: 53.9%

77.8% COMPLETION

Average: 58.8%

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

Dropper (Easy)

100 POINTS OUT OF 100

54.5% ACCURACY

COMPLETION: 100.0%

Analyze the behavior of a PowerShell malware that schedules system events for persistence

Ground floor (Medium)

20 POINTS OUT OF 100

100.0% ACCURACY

COMPLETION: 50.0%

Analyze raw x64 assembly instructions to find a vulnerability in a validation check function

Memfrob (Hard)

0 POINTS OUT OF 100

0.0% ACCURACY

COMPLETION: 0.0%

Analyze and exploit a compiled C binary by leveraging a buffer overflow and ROP chains

Forensics Module

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

858 TH PLACE OUT OF **6273**
NATIONAL RANK

87th National Percentile

130 POINTS OUT OF 300
PERFORMANCE SCORE

Average: 128.7 Points

50.0% ACCURACY

Average: 57.4%

44.4% COMPLETION
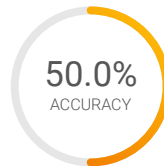
Average: 43.4%

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

Lost (Easy)

100 POINTS OUT OF 100

100.0% ACCURACY

COMPLETION: 100.0%

Recover files from the recycling bin of a Windows filesystem

Fruit (Medium)

30 POINTS OUT OF 100

40.0% ACCURACY

COMPLETION: 40.0%

Recover configuration data from a macOS plist file

Headless (Hard)

0 POINTS OUT OF 100

0.0% ACCURACY

COMPLETION: 0.0%

Identify the file type of the corrupted file and repair its magic bytes

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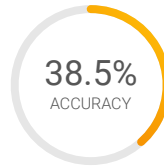CYBER SKYLINE

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.
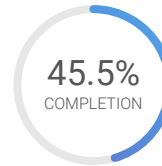
445 TH PLACE
OUT OF **6273**
NATIONAL RANK

93 rd National
Percentile

100 POINTS
OUT OF
300
PERFORMANCE SCORE

Average: 65.6 Points

38.5%
ACCURACY

Average: 37.6%

45.5%
COMPLETION

Average: 32.9%

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

Web (Easy)

100 POINTS
OUT OF
100

55.6%
ACCURACY

COMPLETION: 100.0%

Analyze a web server log and identify traffic patterns

Email Compromise (Medium)

0 POINTS
OUT OF
100

0.0%
ACCURACY

COMPLETION: 0.0%

Analyze Office 365 & DNS logs to identify a phishing email compromise

Fraud (Hard)

0 POINTS
OUT OF
100

0.0%
ACCURACY

COMPLETION: 0.0%

Analyze a payment log to identify what account had fraudulent purchases

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The National Cyber League
A Community Where Cybersecurity Is a Passion
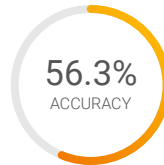
Konner Sawyers
konnersawyers11@gmail.com

Network Traffic Analysis Module

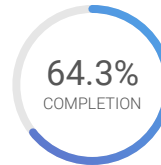Identify malicious and benign network traffic to demonstrate an understanding of potential security breaches.

562 ND PLACE OUT OF 6273
NATIONAL RANK

92 nd National Percentile

190 POINTS OUT OF 370
PERFORMANCE SCORE

Average: 133.0 Points

56.3% ACCURACY

Average: 52.4%

64.3% COMPLETION

Average: 46.9%

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

| Information (Easy) | **70** POINTS OUT OF 100 | **50.0%** ACCURACY | COMPLETION: | **75.0%** |

Analyze a network packet capture of WHOIS queries to obtain information on a domain

| Hidden (Medium) | **20** POINTS OUT OF 70 | **50.0%** ACCURACY | COMPLETION: | **66.7%** |

Analyze a vulnerable WPA-encrypted network and perform a wordlist attack on the password

| Scan (Medium) | **90** POINTS OUT OF 100 | **60.0%** ACCURACY | COMPLETION: | **75.0%** |

Analyze a network packet capture to identify open ports on the target server and the type of nmap scan

| Ponder (Hard) | **10** POINTS OUT OF 100 | **100.0%** ACCURACY | COMPLETION: | **33.3%** |

Analyze a network packet capture to extract data stolen through DNS based data exfiltration

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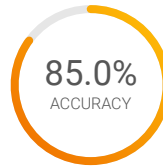**CYBER SKYLINE**

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.
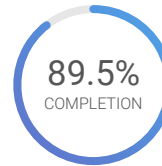
998 TH PLACE OUT OF **6273**
NATIONAL RANK

85th National Percentile

290 POINTS OUT OF 310
PERFORMANCE SCORE

Average: 215.7 Points

85.0% ACCURACY

Average: 80.0%

89.5% COMPLETION

Average: 75.8%

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
Introductory challenge on acceptable conduct during NCL
100.0% ACCURACY
COMPLETION: 100.0%

Waypoints (Easy)
50 POINTS OUT OF 50
Identify openly available information on navigation waypoints
100.0% ACCURACY
COMPLETION: 100.0%

Document (Medium)
30 POINTS OUT OF 50
Extract the fields from the machine-readable zone of a passport
75.0% ACCURACY
COMPLETION: 60.0%

Esoteric (Medium)
50 POINTS OUT OF 50
Identify the esoteric alphabet used to hide a secret message
50.0% ACCURACY
COMPLETION: 100.0%

Greek (Medium)
70 POINTS OUT OF 70
Identify the location of a photograph using reverse image search
100.0% ACCURACY
COMPLETION: 100.0%

Numbers (Hard)
75 POINTS OUT OF 75
Identify the scheme of a set of numbers without a well known format
100.0% ACCURACY
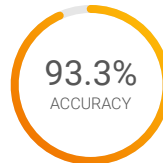COMPLETION: 100.0%

POWERED BY
CYBER SKYLINE
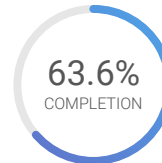
Password Cracking Module

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

735 TH PLACE OUT OF **6273**
NATIONAL RANK

89th National Percentile

185 POINTS OUT OF 360
PERFORMANCE SCORE

Average: 133.2 Points

93.3% ACCURACY

Average: 87.3%

63.6% COMPLETION

Average: 45.5%

TOP NICE WORKROLES

Cyber Operator
Exploitation Analyst
Systems Security Analyst
Cyber Defense Incident Responder
Cyber Crime Investigator

|			
Hashing (Easy)	**30** POINTS OUT OF 30	**75.0%** ACCURACY	COMPLETION: 100.0%
Generate password hashes for MD5, SHA1, and SHA256			
Cracking 1 (Easy)	**45** POINTS OUT OF 45	**100.0%** ACCURACY	COMPLETION: 100.0%
Crack MD5 password hashes			
Cracking 2 (Easy)	**45** POINTS OUT OF 45	**100.0%** ACCURACY	COMPLETION: 100.0%
Crack Windows NTLM password hashes using rainbow tables			
Cracking 3 (Medium)	**45** POINTS OUT OF 45	**100.0%** ACCURACY	COMPLETION: 100.0%
Build a wordlist or pattern config to crack password hashes of a known pattern			
Cracking 4 (Hard)	**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 5 (Hard)	**20** POINTS OUT OF 100	**100.0%** ACCURACY	COMPLETION: 40.0%
Build a wordlist to crack passwords not found in common wordlists			
PDF (Medium)	**0** POINTS OUT OF 50	**0.0%** ACCURACY	COMPLETION: 0.0%
Crack the password for a protected PDF file			

Scanning & Reconnaissance Module

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

332 ND PLACE OUT OF **6273**
NATIONAL RANK

95th National Percentile

145 POINTS OUT OF 300
PERFORMANCE SCORE

Average: 111.6 Points

64.3% ACCURACY

Average: 70.1%

75.0% COMPLETION
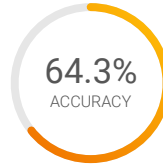
Average: 43.7%

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

Ports (Easy)
100 POINTS OUT OF 100   **100.0%** ACCURACY   COMPLETION: **100.0%**

Scan a remote host for open ports and identify running services

Who (Medium)
-10 POINTS OUT OF 100   **0.0%** ACCURACY   COMPLETION: **0.0%**

Enumerate the possible domains on a WHOIS server to extract information

Metadata (Hard)
55 POINTS OUT OF 100   **80.0%** ACCURACY   COMPLETION: **80.0%**

Scan an AWS EC2 Metadata Service to extract information about the instance
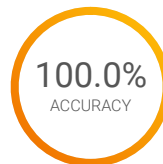
Web Application Exploitation Module

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

135 TH PLACE OUT OF **6273**
NATIONAL RANK

98th National Percentile

110 POINTS OUT OF 300
PERFORMANCE SCORE

Average: 33.0 Points

100.0% ACCURACY

Average: 39.7%

50.0% COMPLETION

Average: 20.0%

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

Shopping (Easy)
10 POINTS OUT OF 100   **100.0%** ACCURACY   COMPLETION: **50.0%**

Exploit an implicit type conversion vulnerability in an express application

Attack Portal (Medium)
100 POINTS OUT OF 100   **100.0%** ACCURACY   COMPLETION: **100.0%**

Manipulate a web form to inject extra JSON fields to override a server-side check

File Server (Hard)
0 POINTS OUT OF 100   **0.0%** ACCURACY   COMPLETION: **0.0%**

Exploit a race condition to download a restricted file during server operations