NCL Fall 2024 Individual Game Scouting Report

Dear Aaron Ng,

Thank you for participating in the National Cyber League (NCL) Fall 2024 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 Fall 2024 Season had 9,260 students/players and 573 faculty/coaches from more than 540 two- and four-year schools & 230 high schools across all 50 U.S. states registered to play. The Individual Game Capture the Flag (CTF) event took place from October 25 through October 27. The Team Game CTF event took place from November 8 through November 10. 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/QHY5KYE76B3F

Based on the performance detailed in this NCL Scouting Report, you have earned **9 hours** of Continuing Education Units (CEUs) as approved by CompTIA. You can learn more about the NCL - CompTIA alignment via nationalcyberleague.org/partners.

Congratulations for your participation in the NCL Fall 2024 Individual Game! We hope you will continue to develop your knowledge and skills and make meaningful contributions as part of the Information Security workforce!
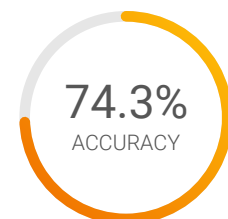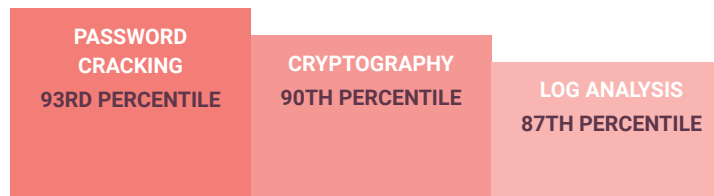
Dr. David Zeichick
NCL Commissioner

NATIONAL CYBER LEAGUE SCORE CARD
NCL FALL 2024 INDIVIDUAL GAME

YOUR TOP CATEGORIES

PASSWORD CRACKING
93RD PERCENTILE

CRYPTOGRAPHY
90TH PERCENTILE

LOG ANALYSIS
87TH PERCENTILE

74.3% ACCURACY

Average: 67.8%

cyberskyline.com/report
ID: QHY5KYE76B3F

NATIONAL RANK
1202ND PLACE OUT OF 8484

PERCENTILE
86TH

Learn more at nationalcyberleague.org

NCL Fall 2024 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.

1202 ND PLACE OUT OF **8484**
NATIONAL RANK

86th National Percentile

1475 POINTS OUT OF 3000
PERFORMANCE SCORE

Average: 1008.9 Points

74.3% ACCURACY
Average: 67.8%

64.3% COMPLETION
Average: 41.1%

Cryptography
275 POINTS OUT OF 330 — **100.0%** ACCURACY — COMPLETION: **82.4%**

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

Enumeration & Exploitation
120 POINTS OUT OF 330 — **100.0%** ACCURACY — COMPLETION: **50.0%**

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

Forensics
100 POINTS OUT OF 315 — **50.0%** ACCURACY — COMPLETION: **37.5%**

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

Log Analysis
200 POINTS OUT OF 300 — **57.1%** ACCURACY — COMPLETION: **92.3%**

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
170 POINTS OUT OF 320 — **57.9%** ACCURACY — COMPLETION: **78.6%**

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

Open Source Intelligence
225 POINTS OUT OF 355 — **84.2%** ACCURACY — COMPLETION: **69.6%**

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
185 POINTS OUT OF 340 — **89.5%** ACCURACY — COMPLETION: **60.7%**

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

Scanning & Reconnaissance
100 POINTS OUT OF 300 — **57.1%** ACCURACY — COMPLETION: **40.0%**

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

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

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.

The National Cyber League
A Community Where Cybersecurity Is a Passion
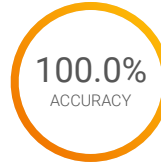
Aaron Ng
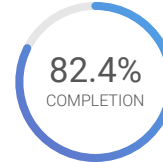aaron.ng@student.sans.edu

Cryptography Module

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

918 TH PLACE OUT OF **8484**
NATIONAL RANK

90th National Percentile

275 POINTS OUT OF 330
PERFORMANCE SCORE

Average: 209.0 Points

100.0%
ACCURACY

Average: 72.6%

82.4%
COMPLETION

Average: 64.6%

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

Analyze and obtain the plaintext from messages encoded with common number bases.

Shift (Easy)
40 POINTS OUT OF 40 | **100.0%** ACCURACY | COMPLETION: 100.0%

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

Number Codes (Easy)
40 POINTS OUT OF 40 | **100.0%** ACCURACY | COMPLETION: 100.0%

Analyze and obtain the plaintext for a message encoded using ASCII codes.

NATO (Easy)
40 POINTS OUT OF 40 | **100.0%** ACCURACY | COMPLETION: 100.0%

Analyze and obtain the plaintext for a message encoded using the NATO alphabet.

Message Signature (Medium)
15 POINTS OUT OF 60 | **100.0%** ACCURACY | COMPLETION: 33.3%

Identify tampered emails by using PGP signatures.

Beep Beep (Medium)
50 POINTS OUT OF 60 | **100.0%** ACCURACY | COMPLETION: 66.7%

Decoded a message that is spelled out using dial tone sounds.

Tampered (Hard)
60 POINTS OUT OF 60 | **100.0%** ACCURACY | COMPLETION: 100.0%
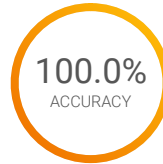
Use CRC checksums to identify a tampered message.

Enumeration & Exploitation Module

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

1571 ST PLACE OUT OF **8484**
NATIONAL RANK

82nd National Percentile

120 POINTS OUT OF 330
PERFORMANCE SCORE

Average: 145.2 Points

100.0% ACCURACY

Average: 72.5%

50.0% COMPLETION

Average: 52.0%

Source (Easy)

110 POINTS OUT OF 110

100.0% ACCURACY

COMPLETION: 100.0%

Reverse engineer the source code of a Rust program to bypass a simple password authentication.

Speedy (Medium)

10 POINTS OUT OF 110

100.0% ACCURACY

COMPLETION: 50.0%

Reverse engineer the source code of a Golang program.

Passphrase (Hard)

0 POINTS OUT OF 110

0.0% ACCURACY

COMPLETION: 0.0%

Reverse engineer an ELF binary to break XOR encryption on a password.

Forensics Module

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

1657 TH PLACE OUT OF **8484**
NATIONAL RANK

81st National Percentile

100 POINTS OUT OF 315
PERFORMANCE SCORE
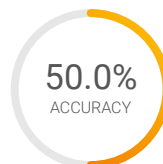
Average: 111.2 Points

50.0% ACCURACY

Average: 50.5%
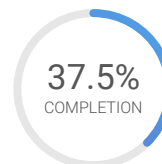
37.5% COMPLETION

Average: 41.1%

Table (Easy)

100 POINTS OUT OF 100

50.0% ACCURACY

COMPLETION: 100.0%

Analyze an ARP table to investigate an ARP spoofing attack.

Plant (Medium)

0 POINTS OUT OF 100

0.0% ACCURACY

COMPLETION: 0.0%

Extract a Linux installer and cpio file to investigate a filesystem.

Incident Response (Hard)

0 POINTS OUT OF 115

0.0% ACCURACY

COMPLETION: 0.0%

Inspect and repair a live system that was tampered with to recover data.
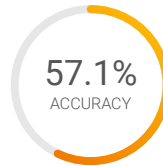
Log Analysis Module

Utilize the proper tools and techniques to establish a baseline for normal operation and identify malicious activities using log files from various services.
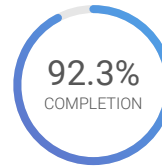
1143 RD PLACE OUT OF **8484**
NATIONAL RANK

87th National Percentile

200 POINTS OUT OF 300
PERFORMANCE SCORE

Average: 160.2 Points

57.1% ACCURACY
Average: 53.9%

92.3% COMPLETION
Average: 60.1%

Audit (Easy)
100 POINTS OUT OF 100 · 55.6% ACCURACY · COMPLETION: 100.0%

Analyze a system auth log file to investigate the behavior of users with elevated privileges.

Packet Log (Medium)
100 POINTS OUT OF 100 · 63.6% ACCURACY · COMPLETION: 100.0%

Identify traffic patterns from a log file of network traffic.

$TICKER (Hard)
0 POINTS OUT OF 100 · 0.0% ACCURACY · COMPLETION: 0.0%

Parse a stock price log to identify a stock price that was manipulated.
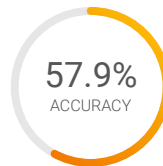
Network Traffic Analysis Module

Identify malicious and benign network traffic to demonstrate an understanding of potential security breaches.
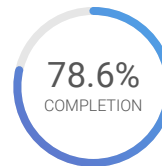
1288 TH PLACE OUT OF **8484**
NATIONAL RANK

85th National Percentile

170 POINTS OUT OF 320
PERFORMANCE SCORE

Average: 148.9 Points

57.9% ACCURACY
Average: 63.2%

78.6% COMPLETION
Average: 65.5%

Address (Easy)
100 POINTS OUT OF 100 · 87.5% ACCURACY · COMPLETION: 100.0%

Analyze the behavior of DHCP traffic from a client connecting to a network.

Home (Medium)
70 POINTS OUT OF 110 · 57.1% ACCURACY · COMPLETION: 80.0%

Analyze a packet capture and decode traffic from TP-Link smart switches.

Spec (Hard)
0 POINTS OUT OF 110 · 0.0% ACCURACY · COMPLETION: 0.0%

Implement a custom specification to decode raw packets.

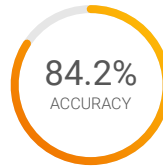POWERED BY
CYBER SKYLINE

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.
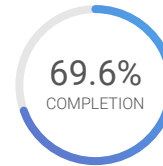
1575 TH PLACE OUT OF **8484**
NATIONAL RANK

82nd National Percentile

225 POINTS OUT OF **355**
PERFORMANCE SCORE

Average: 200.2 Points

84.2% ACCURACY

Average: 73.0%

69.6% COMPLETION

Average: 65.9%

Rules of Conduct (Easy)

25 POINTS OUT OF **25**   **100.0%** ACCURACY   COMPLETION: 100.0%

Introductory challenge on acceptable conduct during NCL.

Vinyl (Easy)

40 POINTS OUT OF **40**   **100.0%** ACCURACY   COMPLETION: 100.0%

Analyze an image using metadata and file properties.

Coordinates (Easy)

60 POINTS OUT OF **60**   **100.0%** ACCURACY   COMPLETION: 100.0%

Geolocate the physical location of a server using an IP address.

NFT (Medium)

30 POINTS OUT OF **60**   **66.7%** ACCURACY   COMPLETION: 50.0%

Conduct blockchain analysis to attribute the ownership of a NFT.

Git (Medium)

15 POINTS OUT OF **75**   **33.3%** ACCURACY   COMPLETION: 20.0%

Obtain private company information that was posted on social media.

Password (Hard)

55 POINTS OUT OF **95**   **100.0%** ACCURACY   COMPLETION: 66.7%

Use coordinates and a SSID to search for a location and find information from public images.

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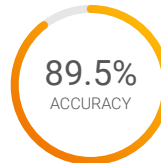
Aaron Ng
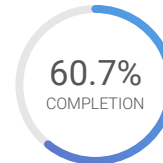aaron.ng@student.sans.edu

Password Cracking Module

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

614 TH PLACE OUT OF **8484**
NATIONAL RANK

93rd National Percentile

185 POINTS OUT OF 340
PERFORMANCE SCORE

Average: 101.6 Points

89.5% ACCURACY

Average: 87.6%

60.7% COMPLETION

Average: 36.6%

|				
Hashing (Easy)	**15** POINTS OUT OF 15	**75.0%** ACCURACY	COMPLETION:	**100.0%**
Generate password hashes for MD5, SHA1, and SHA256.				
Rockyou (Easy)	**30** POINTS OUT OF 30	**100.0%** ACCURACY	COMPLETION:	**100.0%**
Crack MD5 password hashes for password found in the rockyou breach.				
Windows (Easy)	**30** POINTS OUT OF 30	**75.0%** ACCURACY	COMPLETION:	**100.0%**
Crack Windows NTLM password hashes using rainbow tables.				
Pattern (Medium)	**45** POINTS OUT OF 45	**100.0%** ACCURACY	COMPLETION:	**100.0%**
Build a wordlist or pattern rule to crack password hashes of a known pattern.				
ZIP (Medium)	**50** POINTS OUT OF 50	**100.0%** ACCURACY	COMPLETION:	**100.0%**
Crack the insecure password for a protected zip file.				
Wordlist (Hard)	**15** POINTS OUT OF 65	**100.0%** ACCURACY	COMPLETION:	**50.0%**
Build a wordlist to crack passwords not found in common wordlists.				
Complexity (Hard)	**0** POINTS OUT OF 105	**0.0%** ACCURACY	COMPLETION:	**0.0%**
Build a custom wordlist to crack passwords by augmenting permutation rules using known password complexity requirements.				

Scanning & Reconnaissance Module

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

1738 TH PLACE OUT OF **8484**
NATIONAL RANK

80th National Percentile

100 POINTS OUT OF 300
PERFORMANCE SCORE
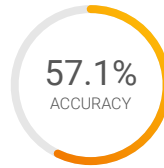
Average: 138.6 Points

57.1% ACCURACY

Average: 56.8%

40.0% COMPLETION

Average: 50.0%

Scan (Easy)
100 POINTS OUT OF 100   **80.0%** ACCURACY   COMPLETION: **100.0%**

Use nmap to scan a machine and discover open ports.

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

Perform reconnaissance on a domain's DNS records to gain information about its assets.

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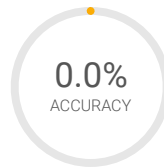**0** POINTS OUT OF 100   **0.0%** ACCURACY   COMPLETION: **0.0%**

Perform reconnaissance on an ICS system by using the Modbus protocol.
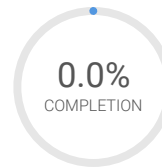
Web Application Exploitation Module

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

N/A
NATIONAL RANK

0 POINTS OUT OF 310
PERFORMANCE SCORE

Average: 102.7 Points

0.0% ACCURACY

Average: 56.0%

0.0% COMPLETION

Average: 43.1%

Candy Store (Easy)
0 POINTS OUT OF 100   **0.0%** ACCURACY   COMPLETION: **0.0%**

Find and exploit a client side authentication vulnerability in a web application.

Shopping v2 (Medium)
0 POINTS OUT OF 100   **0.0%** ACCURACY   COMPLETION: **0.0%**

Exploit a type coercion bug in a Node.Js application.

Indie Metro (Hard)
0 POINTS OUT OF 110   **0.0%** ACCURACY   COMPLETION: **0.0%**

Perform a NoSQL injection attack on a website.