NCL
POWERED BY
CYBER SKYLINE

The National Cyber League
A Community Where Cybersecurity Is a Passion

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NCL Fall 2022 Individual Game Scouting Report

Dear Luke Leveque,

Thank you for participating in the National Cyber League (NCL) 2022 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 2022 Fall Season had 7,690 students/players and 475 faculty/coaches from more than 470 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 October 21 through October 23. The Team Game CTF event took place from November 4 through November 6. 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/LG54F8QUDXP9

Based on the the performance detailed in this NCL Scouting Report, you have earned **2 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 2022 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 2022 FALL INDIVIDUAL GAME

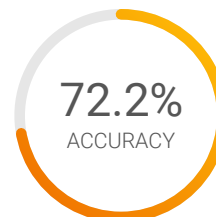**YOUR TOP CATEGORIES**

SCANNING & RECONNAISSANCE 96TH PERCENTILE	FORENSICS 96TH PERCENTILE	WEB APPLICATION EXPLOITATION 92ND PERCENTILE

NATIONAL RANK
457TH PLACE
OUT OF 6675

PERCENTILE
94TH

72.2% ACCURACY

Average: 68.2%

cyberskyline.com/report
ID: LG54F8QUDXP9

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NCL Fall 2022 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.

457 TH PLACE OUT OF **6675**
NATIONAL RANK

94th National Percentile

1540 POINTS OUT OF 3000
PERFORMANCE SCORE
Average: 816.7 Points
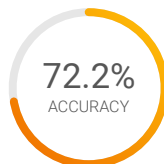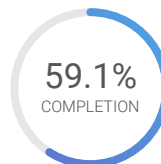
72.2% ACCURACY
Average: 68.2%

59.1% COMPLETION
Average: 35.0%

Cryptography
260 POINTS OUT OF 340 — **90.0%** ACCURACY — COMPLETION: **75.0%**

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

Enumeration & Exploitation
15 POINTS OUT OF 325 — **16.7%** ACCURACY — COMPLETION: **7.1%**

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

Forensics
170 POINTS OUT OF 300 — **30.0%** ACCURACY — COMPLETION: **50.0%**

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

Log Analysis
125 POINTS OUT OF 320 — **55.0%** ACCURACY — COMPLETION: **52.4%**

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
145 POINTS OUT OF 360 — **70.6%** ACCURACY — COMPLETION: **60.0%**

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

Open Source Intelligence
300 POINTS OUT OF 300 — **87.0%** ACCURACY — COMPLETION: **100.0%**

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
215 POINTS OUT OF 330 — **100.0%** ACCURACY — COMPLETION: **72.2%**

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

Scanning & Reconnaissance
150 POINTS OUT OF 300 — **100.0%** ACCURACY — COMPLETION: **38.5%**

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

Web Application Exploitation
60 POINTS OUT OF 325 — **100.0%** ACCURACY — COMPLETION: **42.9%**

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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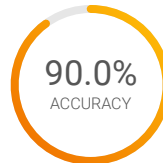lileve01@louisville.edu

Cryptography Module

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

641 ST PLACE OUT OF **6675**
NATIONAL RANK

91 st National Percentile

260 POINTS OUT OF 340
PERFORMANCE SCORE

Average: 177.8 Points

90.0% ACCURACY

Average: 77.5%

75.0% COMPLETION

Average: 63.3%

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%

Identify the type of base encoding used and decode the data

Decoding 2 (Easy)	50 POINTS OUT OF 50	100.0% ACCURACY	COMPLETION: 100.0%

Identify the cipher scheme used and decrypt the data

Decoding 3 (Easy)	40 POINTS OUT OF 40	50.0% ACCURACY	COMPLETION: 100.0%

Identify the encoding scheme used and decode the data

Decoding 4 (Medium)	40 POINTS OUT OF 40	100.0% ACCURACY	COMPLETION: 100.0%

Identify the encoding scheme used and decode the data

Decoding 5 (Hard)	50 POINTS OUT OF 50	100.0% ACCURACY	COMPLETION: 100.0%

Identify the cipher scheme used and decrypt the data

Decoding 6 (Hard)	0 POINTS OUT OF 80	0.0% ACCURACY	COMPLETION: 0.0%

Break the encryption on a trivial RSA encryption without the secret key

Steganography (Medium)	50 POINTS OUT OF 50	100.0% ACCURACY	COMPLETION: 100.0%

Identify the steganography technique used and extract the hidden data

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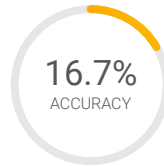
Enumeration & Exploitation Module

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

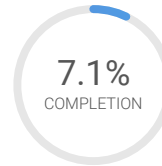**1403** RD PLACE
OUT OF 6675
NATIONAL RANK

79th National Percentile

15 POINTS
OUT OF 325
PERFORMANCE SCORE

Average: 56.9 Points

16.7%
ACCURACY

Average: 41.5%

7.1%
COMPLETION

Average: 14.8%

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

Shell (Easy)

15 POINTS OUT OF 100   **50.0%** ACCURACY   COMPLETION: **50.0%**

Analyze a shell script to identify its functionalities and vulnerabilities

Tracked (Medium)

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

Identify the keylogger installed on a remote Linux system and its configuration

NetCode (Hard)

0 POINTS OUT OF 125   **0.0%** ACCURACY   COMPLETION: **0.0%**

Decompile a binary malware to identify its target environment and reverse engineer the Domain Generation Algorithm (DGA) to find the Command and Control (C2) server
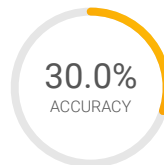
Forensics Module

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

327 TH PLACE
OUT OF 6675
NATIONAL RANK

96th National Percentile

170 POINTS
OUT OF 300
PERFORMANCE SCORE

Average: 100.0 Points

30.0%
ACCURACY

Average: 42.2%

50.0%
COMPLETION

Average: 25.3%

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

Stacked (Easy)

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

Extract additional files hidden in a photograph file using tools such as binwalk

Paper Trail (Medium)

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

Analyze a "counterfeit" bill to find the hidden Printer Machine Identification Code and identify the machine that printed the "counterfeit" bill

USB (Hard)

70 POINTS OUT OF 100   **28.6%** ACCURACY   COMPLETION: **66.7%**

Recover and extract files from a filesystem image using tools such as Autopsy

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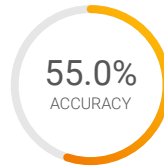lileve01@louisville.edu

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.

752 ND PLACE OUT OF **6675**
NATIONAL RANK

89th National Percentile

125 POINTS OUT OF **320**
PERFORMANCE SCORE
Average: 107.6 Points

55.0% ACCURACY
Average: 41.6%

52.4% COMPLETION
Average: 41.7%

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

Compromise (Easy) — 90 POINTS OUT OF 100 — 61.5% ACCURACY — COMPLETION: 88.9%
Analyze a Linux kernel log to identify threat actor activity and backdoors

Access (Medium) — 35 POINTS OUT OF 100 — 42.9% ACCURACY — COMPLETION: 37.5%
Analyze a SSH server log to identify compromise attempts from threat actors

Minimal (Hard) — 0 POINTS OUT OF 120 — 0.0% ACCURACY — COMPLETION: 0.0%
Analyze a binary log format and calculate anomalies in the log
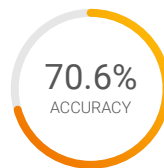
Network Traffic Analysis Module

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

844 TH PLACE OUT OF **6675**
NATIONAL RANK

88th National Percentile

145 POINTS OUT OF **360**
PERFORMANCE SCORE
Average: 125.6 Points

70.6% ACCURACY
Average: 62.3%

60.0% COMPLETION
Average: 49.6%

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

Retriever (Easy) — 90 POINTS OUT OF 90 — 100.0% ACCURACY — COMPLETION: 100.0%
Extract sensitive information from emails in an IMAP packet capture

WiFi Cracking (Medium) — 25 POINTS OUT OF 70 — 40.0% ACCURACY — COMPLETION: 40.0%
Identify vulnerable WiFi encryption scheme and crack the WiFi password

Trip to the Movies (Medium) — 30 POINTS OUT OF 90 — 60.0% ACCURACY — COMPLETION: 60.0%
Extract the video stream transferred in an RTP packet capture

Secret (Hard) — 0 POINTS OUT OF 110 — 0.0% ACCURACY — COMPLETION: 0.0%
Analyze and extract sensitive information from a covert DNS-based tunneling protocol in a comprehensive packet capture

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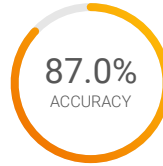
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Open Source Intelligence Module

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

566 TH PLACE
OUT OF **6675**
NATIONAL RANK

92 nd National Percentile

300 POINTS OUT OF 300
PERFORMANCE SCORE

Average: 204.2 Points

87.0%
ACCURACY

Average: 79.4%

100.0%
COMPLETION

Average: 77.7%

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

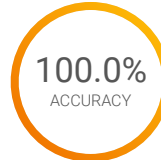| Challenge	Points	Accuracy	Completion
Rules of Conduct (Easy)	15 POINTS OUT OF 15	100.0% ACCURACY	100.0%
Introductory challenge on acceptable conduct during NCL			
Bank Routes (Easy)	40 POINTS OUT OF 40	100.0% ACCURACY	100.0%
Identify bank routing numbers using openly available information			
Alley (Medium)	35 POINTS OUT OF 35	100.0% ACCURACY	100.0%
Extract GPS coordinates from JPEG metadata to find where the photo was taken			
GeoData (Medium)	50 POINTS OUT OF 50	100.0% ACCURACY	100.0%
Utilize Geographic Information System (GIS) to identify land plot and owner data			
Colonial Crypto (Medium)	60 POINTS OUT OF 60	60.0% ACCURACY	100.0%
Uncover the redacted Bitcoin wallets in the 2021 Colonial Ransomware Attack			
Info (Hard)	100 POINTS OUT OF 100	80.0% ACCURACY	100.0%
Analyze an unknown identifier scheme to find the media metadata			

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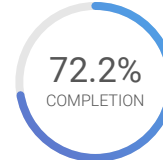
Password Cracking Module

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

588 TH PLACE
OUT OF **6675**
NATIONAL RANK

92 nd National Percentile

215 POINTS
OUT OF 330
PERFORMANCE SCORE

Average: 133.7 Points

100.0%
ACCURACY

Average: 87.6%

72.2%
COMPLETION

Average: 50.1%

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)	**60** POINTS OUT OF 60	**100.0%** ACCURACY	COMPLETION:	**100.0%**
Crack MD5 password hashes				
Cracking 2 (Easy)	**60** POINTS OUT OF 60	**100.0%** ACCURACY	COMPLETION:	**100.0%**
Crack Windows NTLM password hashes using rainbow tables				
Cracking 3 (Medium)	**60** POINTS OUT OF 60	**100.0%** ACCURACY	COMPLETION:	**100.0%**
Build a wordlist or pattern config to crack password hashes of a known pattern				
Cracking 4 (Hard)	**20** POINTS OUT OF 135	**100.0%** ACCURACY	COMPLETION:	**16.7%**
Build a wordlist to crack passwords not found in common wordlists				

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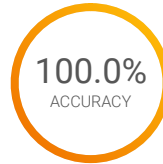lileve01@louisville.edu

Scanning & Reconnaissance Module

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

318 TH PLACE OUT OF **6675**
NATIONAL RANK

96th National Percentile

150 POINTS OUT OF 300
PERFORMANCE SCORE

Average: 115.0 Points

100.0% ACCURACY

Average: 70.6%

38.5% COMPLETION

Average: 31.3%

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

Looking Glass (Easy)
100 POINTS OUT OF 100 — **100.0%** ACCURACY — COMPLETION: **100.0%**

Scan a HTTP server to enumerate its contents and possible vulnerabilities

Net Track (Medium)
50 POINTS OUT OF 100 — **100.0%** ACCURACY — COMPLETION: **66.7%**

Communicate with a text-based service using netcat/telnet

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

Scan and analyze the results from an HTTP BitTorrent Tracker service

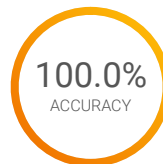## Web Application Exploitation Module

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

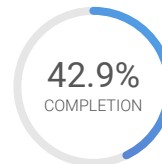**550** TH PLACE OUT OF **6675**
NATIONAL RANK

92nd National Percentile

60 POINTS OUT OF 325
PERFORMANCE SCORE

Average: 74.9 Points

100.0% ACCURACY

Average: 82.6%

42.9% COMPLETION

Average: 40.2%

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

Tom's Fan Club (Easy)
50 POINTS OUT OF 100 — **100.0%** ACCURACY — COMPLETION: **66.7%**

Craft custom requests to a web server to uncover hidden pages

Setup (Medium)
10 POINTS OUT OF 100 — **100.0%** ACCURACY — COMPLETION: **33.3%**

Identify and exploit a directory traversal vulnerability in nginx to download sensitive files from the web server

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

Identify and exploit a SQL injection vulnerability to gain unauthorized access to a web server database