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CYBER SKYLINE

The National Cyber League
A Community Where Cybersecurity Is a Passion

Thaddeus Thomas
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NCL Fall 2022 Individual Game Scouting Report

Dear Thaddeus Thomas,

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/H0Y7GEVAFWAG



Based on the the performance detailed in this NCL Scouting Report, you have earned **5 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



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CYBER SKYLINE

NATIONAL CYBER LEAGUE SCORE CARD

NCL 2022 FALL INDIVIDUAL GAME

YOUR TOP CATEGORIES

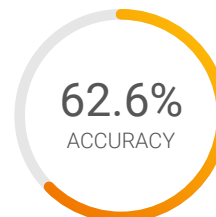


NATIONAL RANK

**438TH PLACE
OUT OF 6675**

PERCENTILE

94TH



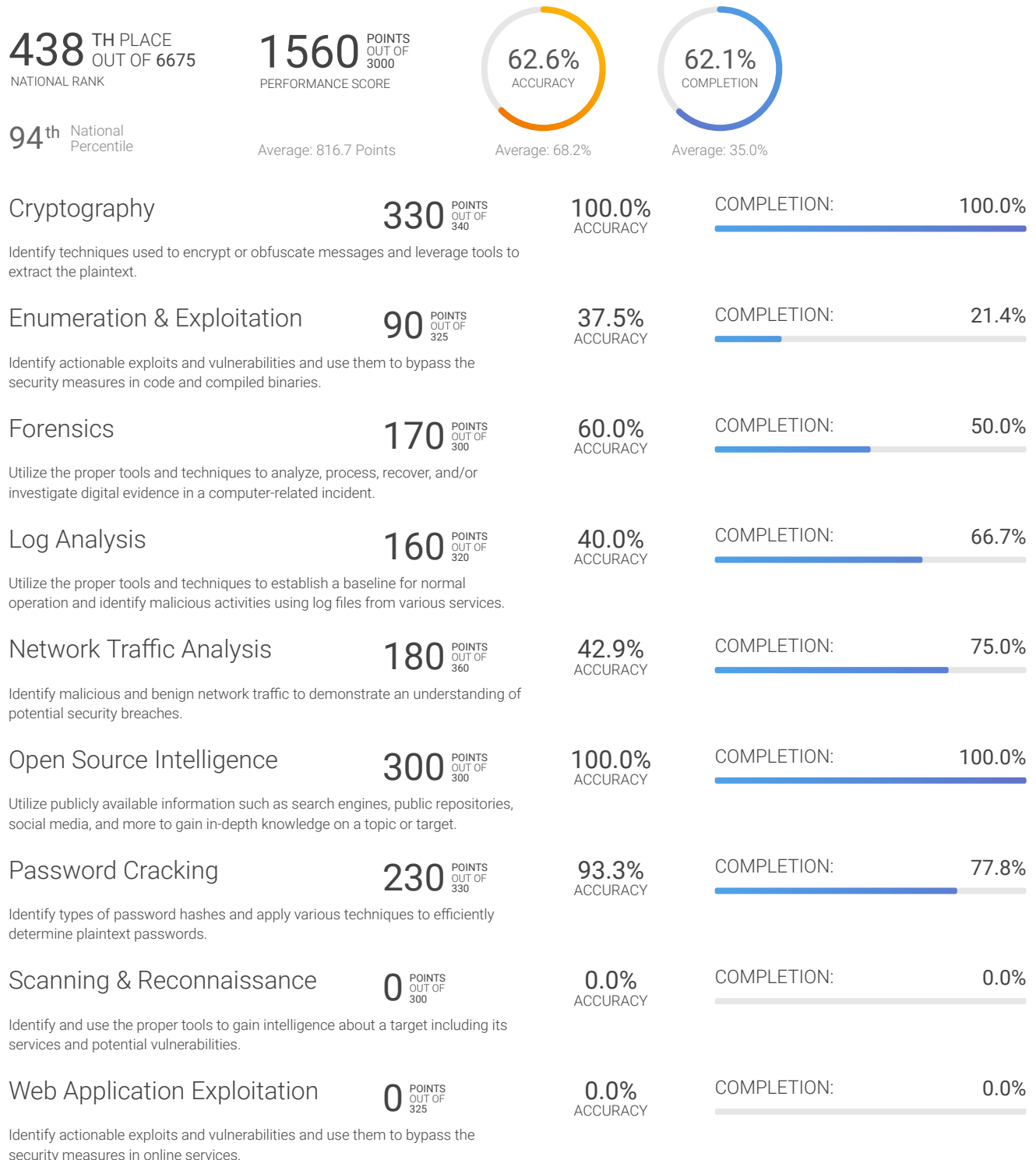
Average: 68.2%

cyberskyline.com/report/H0Y7GEVAFWAG



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.



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





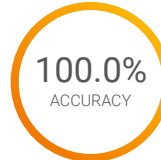
Cryptography Module

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

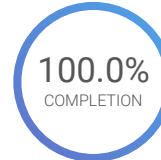
229 ^{TH PLACE}
OUT OF 6675
NATIONAL RANK

330 ^{POINTS}
OUT OF 340
PERFORMANCE SCORE

Average: 177.8 Points



Average: 77.5%



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

100.0%
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)

40 ^{POINTS}
OUT OF 50

100.0%
ACCURACY

COMPLETION: 100.0%

Identify the cipher scheme used and decrypt the data

Decoding 6 (Hard)

80 ^{POINTS}
OUT OF 80

100.0%
ACCURACY

COMPLETION: 100.0%

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





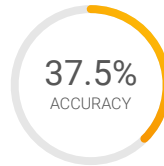
Enumeration & Exploitation Module

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

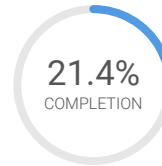
596 TH PLACE
OUT OF 6675
NATIONAL RANK

90 POINTS
OUT OF 325
PERFORMANCE SCORE

Average: 56.9 Points



Average: 41.5%



Average: 14.8%

TOP NICE WORKROLES

Cyber Operator
Target Developer
Exploitation Analyst
Software Developer
Systems Security Analyst

92nd National
Percentile

Shell (Easy)

15 POINTS
OUT OF 100

100.0%
ACCURACY

COMPLETION: **50.0%**

Analyze a shell script to identify its functionalities and vulnerabilities

Tracked (Medium)

75 POINTS
OUT OF 100

50.0%
ACCURACY

COMPLETION: **50.0%**

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

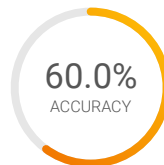
Forensics Module

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

240 TH PLACE
OUT OF 6675
NATIONAL RANK

170 POINTS
OUT OF 300
PERFORMANCE SCORE

Average: 100.0 Points



Average: 42.2%



Average: 25.3%

TOP NICE WORKROLES

Cyber Defense Forensics
Analyst
Cyber Crime Investigator
Cyber Defense Incident
Responder
Cyber Defense Analyst

97th National
Percentile

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

50.0%
ACCURACY

COMPLETION: **66.7%**

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





Log Analysis Module

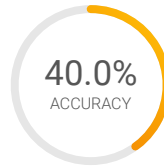
Utilize the proper tools and techniques to establish a baseline for normal operation and identify malicious activities using log files from various services.

573 RD PLACE
OUT OF 6675
NATIONAL RANK

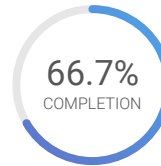
92nd National
Percentile

160 POINTS
OUT OF 320
PERFORMANCE SCORE

Average: 107.6 Points



Average: 41.6%



Average: 41.7%

TOP NICE WORKROLES

Cyber Defense Analyst
Systems Security Analyst
All-Source Analyst
Cyber Defense Forensics
Analyst
Data Analyst

Compromise (Easy)

Analyze a Linux kernel log to identify threat actor activity and backdoors

100 POINTS
OUT OF 100

60.0%
ACCURACY

COMPLETION: **100.0%**

Access (Medium)

Analyze a SSH server log to identify compromise attempts from threat actors

60 POINTS
OUT OF 100

55.6%
ACCURACY

COMPLETION: **62.5%**

Minimal (Hard)

Analyze a binary log format and calculate anomalies in the log

0 POINTS
OUT OF 120

0.0%
ACCURACY

COMPLETION: **0.0%**

Network Traffic Analysis Module

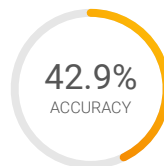
Identify malicious and benign network traffic to demonstrate an understanding of potential security breaches.

476 TH PLACE
OUT OF 6675
NATIONAL RANK

93rd National
Percentile

180 POINTS
OUT OF 360
PERFORMANCE SCORE

Average: 125.6 Points



Average: 62.3%



Average: 49.6%

TOP NICE WORKROLES

Cyber Defense Analyst
All-Source Analyst
Cyber Defense Incident
Responder
Target Network Analyst
Cyber Operator

Retriever (Easy)

Extract sensitive information from emails in an IMAP packet capture

90 POINTS
OUT OF 90

100.0%
ACCURACY

COMPLETION: **100.0%**

WiFi Cracking (Medium)

Identify vulnerable WiFi encryption scheme and crack the WiFi password

60 POINTS
OUT OF 70

71.4%
ACCURACY

COMPLETION: **100.0%**

Trip to the Movies (Medium)

Extract the video stream transferred in an RTP packet capture

30 POINTS
OUT OF 90

14.3%
ACCURACY

COMPLETION: **60.0%**

Secret (Hard)

Analyze and extract sensitive information from a covert DNS-based tunneling protocol in a comprehensive packet capture

0 POINTS
OUT OF 110

0.0%
ACCURACY

COMPLETION: **0.0%**



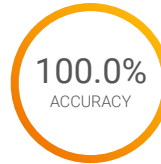


Open Source Intelligence Module

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

64TH PLACE
OUT OF 6675
NATIONAL RANK

300 POINTS
OUT OF 300
PERFORMANCE SCORE



Average: 79.4%



Average: 77.7%

TOP NICE WORKROLES

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

100th National
Percentile

Average: 204.2 Points

Rules of Conduct (Easy)

15 POINTS
OUT OF 15

100.0%
ACCURACY

COMPLETION: **100.0%**

Introductory challenge on acceptable conduct during NCL

Bank Routes (Easy)

40 POINTS
OUT OF 40

100.0%
ACCURACY

COMPLETION: **100.0%**

Identify bank routing numbers using openly available information

Alley (Medium)

35 POINTS
OUT OF 35

100.0%
ACCURACY

COMPLETION: **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

COMPLETION: **100.0%**

Utilize Geographic Information System (GIS) to identify land plot and owner data

Colonial Crypto (Medium)

60 POINTS
OUT OF 60

100.0%
ACCURACY

COMPLETION: **100.0%**

Uncover the redacted Bitcoin wallets in the 2021 Colonial Ransomware Attack

Info (Hard)

100 POINTS
OUT OF 100

100.0%
ACCURACY

COMPLETION: **100.0%**

Analyze an unknown identifier scheme to find the media metadata



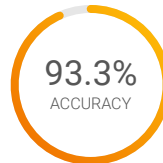


Password Cracking Module

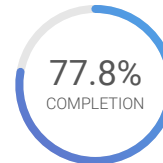
Identify types of password hashes and apply various techniques to efficiently determine plaintext passwords.

348 TH PLACE
OUT OF 6675
NATIONAL RANK

230 POINTS
OUT OF 330
PERFORMANCE SCORE



Average: 87.6%



Average: 50.1%

TOP NICE WORKROLES

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

95th National
Percentile

Average: 133.7 Points

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

75.0%
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)

35 POINTS
OUT OF 135

100.0%
ACCURACY

COMPLETION: **33.3%**

Build a wordlist to crack passwords not found in common wordlists





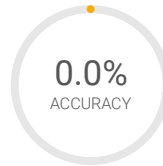
Scanning & Reconnaissance Module

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

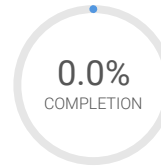
N/A
NATIONAL RANK

0 POINTS
OUT OF
300
PERFORMANCE SCORE

Average: 115.0 Points



Average: 70.6%



Average: 31.3%

TOP NICE WORKROLES

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

Looking Glass (Easy)

0 POINTS
OUT OF
100

0.0%
ACCURACY

COMPLETION: 0.0%

Scan a HTTP server to enumerate its contents and possible vulnerabilities

Net Track (Medium)

0 POINTS
OUT OF
100

0.0%
ACCURACY

COMPLETION: 0.0%

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

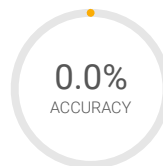
Web Application Exploitation Module

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

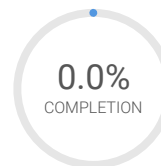
N/A
NATIONAL RANK

0 POINTS
OUT OF
325
PERFORMANCE SCORE

Average: 74.9 Points



Average: 82.6%



Average: 40.2%

TOP NICE WORKROLES

Cyber Operator
Software Developer
Exploitation Analyst
Systems Security Analyst
Database Administrator

Tom's Fan Club (Easy)

0 POINTS
OUT OF
100

0.0%
ACCURACY

COMPLETION: 0.0%

Craft custom requests to a web server to uncover hidden pages

Setup (Medium)

0 POINTS
OUT OF
100

0.0%
ACCURACY

COMPLETION: 0.0%

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





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A Community Where Cybersecurity Is a Passion

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NCL Fall 2022 Team Game Scouting Report

Dear Thaddeus Thomas (Team "Shout IT Out Cloud"),

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.

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To validate this report, please access: cyberskyline.com/report/7L673LF6F3T4

Congratulations for your participation in the NCL 2022 Fall Team 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



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CYBER SKYLINE

NATIONAL CYBER LEAGUE SCORE CARD

NCL 2022 FALL TEAM GAME

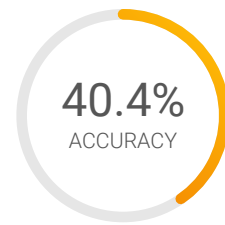
YOUR TOP CATEGORIES

ENUMERATION &
EXPLOITATION
99TH PERCENTILE

OPEN SOURCE
INTELLIGENCE
98TH PERCENTILE

CRYPTOGRAPHY
98TH PERCENTILE

NATIONAL RANK
110TH PLACE
OUT OF 3926
PERCENTILE
98TH



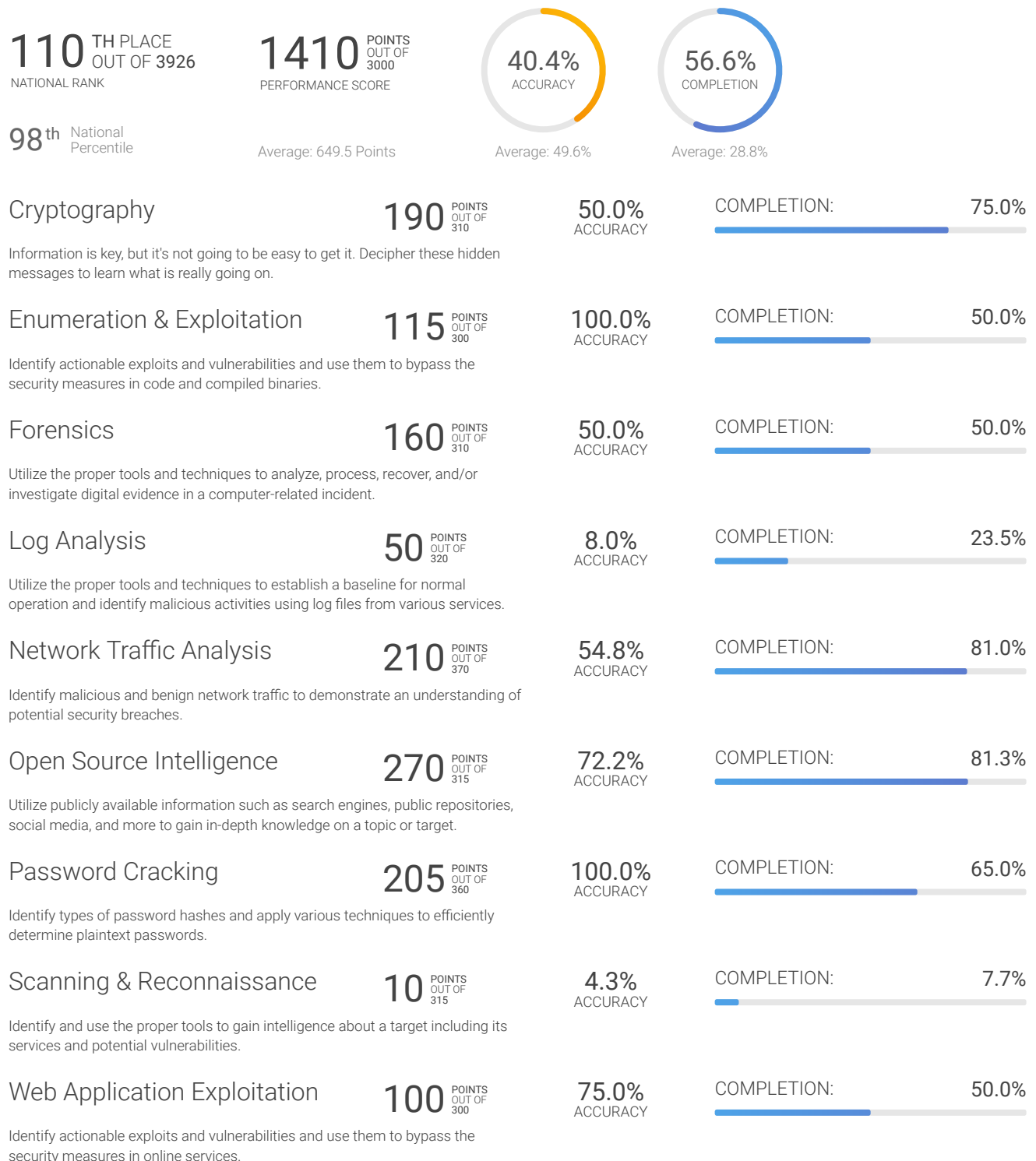
Average: 49.6%

cyberskyline.com/report/7L673LF6F3T4



NCL Fall 2022 Team Game

The NCL Team Game is designed for student players nationwide to compete in realtime in the categories listed below. The Team Game promotes camaraderie and evaluates the collective technical cybersecurity skills of the team members.



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





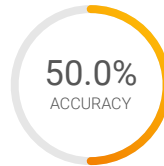
Cryptography Module

Information is key, but it's not going to be easy to get it. Decipher these hidden messages to learn what is really going on.

88TH PLACE
OUT OF 3926
NATIONAL RANK

190 POINTS
OUT OF 310
PERFORMANCE SCORE

Average: 119.3 Points



Average: 78.6%



Average: 54.1%

TOP NICE WORKROLES

Security Control Assessor
Secure Software Assessor
Exploitation Analyst
Cyber Operator
Security Architect

98th National
Percentile

Decoding 1 (Easy)

Identify the cipher scheme used and decrypt the data

30 POINTS
OUT OF 30

100.0%
ACCURACY

COMPLETION: **100.0%**

Decoding 2 (Easy)

Identify the cipher scheme used and decrypt the data

20 POINTS
OUT OF 20

50.0%
ACCURACY

COMPLETION: **100.0%**

Decoding 3 (Easy)

Identify the cipher scheme used and decrypt the data

35 POINTS
OUT OF 35

100.0%
ACCURACY

COMPLETION: **100.0%**

Decoding 4 (Medium)

Identify the communication scheme used and decode the message

20 POINTS
OUT OF 20

50.0%
ACCURACY

COMPLETION: **100.0%**

Decoding 5 (Medium)

Identify the cipher scheme used and decrypt the data

35 POINTS
OUT OF 55

25.0%
ACCURACY

COMPLETION: **66.7%**

Problem (Medium)

Identify the steganography technique used and extract the hidden data

50 POINTS
OUT OF 50

50.0%
ACCURACY

COMPLETION: **100.0%**

Magnetic (Hard)

Convert credit card magnetic stripe audio into numeric data

0 POINTS
OUT OF 100

0.0%
ACCURACY

COMPLETION: **0.0%**





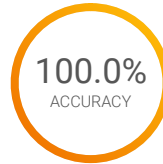
Enumeration & Exploitation Module

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

75TH PLACE
OUT OF 3926
NATIONAL RANK

115 POINTS
OUT OF 300
PERFORMANCE SCORE

Average: 52.0 Points



Average: 51.7%



Average: 27.7%

TOP NICE WORKROLES

Cyber Operator
Target Developer
Exploitation Analyst
Software Developer
Systems Security Analyst

99th National
Percentile

Channels (Easy)

100 POINTS
OUT OF 100

100.0%
ACCURACY

COMPLETION: **100.0%**

Analyze Go source code to identify its functionalities and vulnerabilities

Miner (Medium)

15 POINTS
OUT OF 100

100.0%
ACCURACY

COMPLETION: **50.0%**

Decompile a binary crypto-miner malware to identify its functionalities

Password Manager (Hard)

0 POINTS
OUT OF 100

0.0%
ACCURACY

COMPLETION: **0.0%**

Decompile and analyze a binary that implements a virtual machine (VM) for a custom instruction set architecture (ISA) and break the encryption to a custom password manager program

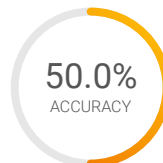
Forensics Module

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

99TH PLACE
OUT OF 3926
NATIONAL RANK

160 POINTS
OUT OF 310
PERFORMANCE SCORE

Average: 106.1 Points



Average: 57.8%



Average: 26.7%

TOP NICE WORKROLES

Cyber Defense Forensics
Analyst
Cyber Crime Investigator
Cyber Defense Incident
Responder
Cyber Defense Analyst

98th National
Percentile

Blocked (Easy)

100 POINTS
OUT OF 100

100.0%
ACCURACY

COMPLETION: **100.0%**

Analyze a redacted PDF file to identify techniques to remove the redaction

Hiding (Medium)

0 POINTS
OUT OF 100

0.0%
ACCURACY

COMPLETION: **0.0%**

Identify the compressed data stream without header metadata

Unknown (Hard)

60 POINTS
OUT OF 110

44.4%
ACCURACY

COMPLETION: **50.0%**

Analyze a ZFS pool to extract hidden files and metadata





Log Analysis Module

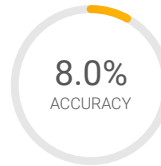
Utilize the proper tools and techniques to establish a baseline for normal operation and identify malicious activities using log files from various services.

282 ND PLACE
OUT OF 3926
NATIONAL RANK

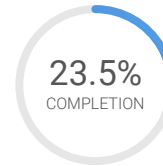
93rd National
Percentile

50 POINTS
OUT OF 320
PERFORMANCE SCORE

Average: 63.6 Points



Average: 26.9%



Average: 23.6%

TOP NICE WORKROLES

Cyber Defense Analyst
Systems Security Analyst
All-Source Analyst
Cyber Defense Forensics
Analyst
Data Analyst

Cubes (Easy)

50 POINTS
OUT OF 100

9.5%
ACCURACY

COMPLETION: 57.1%

Analyze a DNS server log to identify potentially malicious domains

Lunch (Medium)

0 POINTS
OUT OF 100

0.0%
ACCURACY

COMPLETION: 0.0%

Analyze a web server log using MessagePack encoding and identify anomalies

Collection (Hard)

0 POINTS
OUT OF 120

0.0%
ACCURACY

COMPLETION: 0.0%

Analyze employee badge and motion sensor logs to compute outliers and identify anomalous behavior

Network Traffic Analysis Module

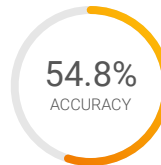
Identify malicious and benign network traffic to demonstrate an understanding of potential security breaches.

139 TH PLACE
OUT OF 3926
NATIONAL RANK

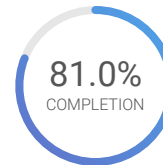
97th National
Percentile

210 POINTS
OUT OF 370
PERFORMANCE SCORE

Average: 111.9 Points



Average: 41.6%



Average: 46.4%

TOP NICE WORKROLES

Cyber Defense Analyst
All-Source Analyst
Cyber Defense Incident
Responder
Target Network Analyst
Cyber Operator

VPN (Easy)

60 POINTS
OUT OF 100

35.0%
ACCURACY

COMPLETION: 77.8%

Extract sensitive information transferred in a VPN packet capture

WiFi Cracking (Medium)

30 POINTS
OUT OF 70

75.0%
ACCURACY

COMPLETION: 75.0%

Identify vulnerable WiFi encryption scheme and crack the WiFi password

Kick Back (Medium)

100 POINTS
OUT OF 100

100.0%
ACCURACY

COMPLETION: 100.0%

Analyze the unencrypted IOT device traffic to extract personal information from a smart home packet capture

Extraction (Hard)

20 POINTS
OUT OF 100

100.0%
ACCURACY

COMPLETION: 66.7%

Identify and extract the hidden RTMP video stream transferred in a comprehensive packet capture





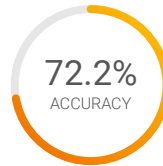
Open Source Intelligence Module

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

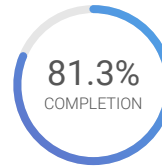
85TH PLACE
OUT OF 3926
NATIONAL RANK

270 POINTS
OUT OF 315
PERFORMANCE SCORE

Average: 150.0 Points



Average: 49.7%



Average: 65.4%

TOP NICE WORKROLES

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

Rules of Conduct (Easy)

25 POINTS
OUT OF 25

83.3%
ACCURACY

COMPLETION: **100.0%**

Introductory challenge on acceptable conduct during NCL

Defense Acquisition (Easy)

45 POINTS
OUT OF 45

50.0%
ACCURACY

COMPLETION: **100.0%**

Identify the common organizations responsible for purchases for the government

Vehicle (Easy)

50 POINTS
OUT OF 50

100.0%
ACCURACY

COMPLETION: **100.0%**

Utilize reverse image search tools to identify the make and model of a vehicle

Targets (Medium)

0 POINTS
OUT OF 45

0.0%
ACCURACY

COMPLETION: **0.0%**

Investigate an unknown number scheme to identify the IP address associated with the number

District (Medium)

50 POINTS
OUT OF 50

75.0%
ACCURACY

COMPLETION: **100.0%**

Utilize Geographic Information System (GIS) to identify land plot and owner data

Tracking (Hard)

100 POINTS
OUT OF 100

100.0%
ACCURACY

COMPLETION: **100.0%**

Investigate commonalities in the locations from a sequence of GPS coordinates to identify the potential next target location



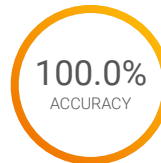


Password Cracking Module

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

142 ND PLACE
OUT OF 3926
NATIONAL RANK

205 POINTS
OUT OF 360
PERFORMANCE SCORE



Average: 87.0%



Average: 39.5%

TOP NICE WORKROLES

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

97th National
Percentile

Average: 123.5 Points

Cracking 1 (Easy)

Crack MD5, SHA1, and SHA256 password hashes

45 POINTS
OUT OF 45

100.0%
ACCURACY

COMPLETION: **100.0%**

Cracking 2 (Easy)

Crack Windows NTLM password hashes using rainbow tables

45 POINTS
OUT OF 45

100.0%
ACCURACY

COMPLETION: **100.0%**

Cracking 3 (Medium)

Build a wordlist or pattern config to crack password hashes of a known pattern

60 POINTS
OUT OF 60

100.0%
ACCURACY

COMPLETION: **100.0%**

Cracking 4 (Hard)

Build a wordlist to crack passwords not found in common wordlists

55 POINTS
OUT OF 100

100.0%
ACCURACY

COMPLETION: **66.7%**

PPTX (Medium)

Crack the password for a protected PowerPoint file

0 POINTS
OUT OF 50

0.0%
ACCURACY

COMPLETION: **0.0%**

WiFi (Hard)

Crack the password hashes stored in a Linux wpa_supplicant.conf file

0 POINTS
OUT OF 60

0.0%
ACCURACY

COMPLETION: **0.0%**





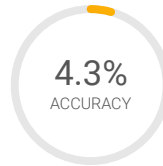
Scanning & Reconnaissance Module

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

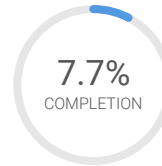
202 ND PLACE
OUT OF 3926
NATIONAL RANK

10 POINTS
OUT OF 315
PERFORMANCE SCORE

Average: 33.4 Points



Average: 19.0%



Average: 9.3%

TOP NICE WORKROLES

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

95th National
Percentile

Catch Me If You Can (Easy)

0 POINTS
OUT OF 100

0.0%
ACCURACY

COMPLETION: **0.0%**

Scan the available UDP ports on a target system

Interstellar (Medium)

0 POINTS
OUT OF 100

0.0%
ACCURACY

COMPLETION: **0.0%**

Scan an InterPlanetary File System (IPFS) server and retrieve a file from the service

Tracker (Hard)

10 POINTS
OUT OF 115

100.0%
ACCURACY

COMPLETION: **12.5%**

Scan and analyze the results from an UDP BitTorrent Tracker service

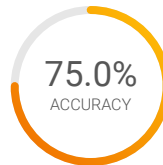
Web Application Exploitation Module

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

162 ND PLACE
OUT OF 3926
NATIONAL RANK

100 POINTS
OUT OF 300
PERFORMANCE SCORE

Average: 59.4 Points



Average: 38.0%



Average: 29.5%

TOP NICE WORKROLES

Cyber Operator
Software Developer
Exploitation Analyst
Systems Security Analyst
Database Administrator

96th National
Percentile

Ticket Scalper (Easy)

100 POINTS
OUT OF 100

100.0%
ACCURACY

COMPLETION: **100.0%**

Exploit a ticket booking app by analyzing the partial logic in the browser side JavaScript code

Pesto's Pizza (Medium)

0 POINTS
OUT OF 100

0.0%
ACCURACY

COMPLETION: **0.0%**

Identify and exploit a PHP type juggling vulnerability to gain unauthorized access

Mercury Lotto (Hard)

0 POINTS
OUT OF 100

0.0%
ACCURACY

COMPLETION: **0.0%**

Identify and exploit a seeded random number generator by analyzing the deterministic server behavior





POWERED BY
CYBER SKYLINE

The National Cyber League
A Community Where Cybersecurity Is a Passion

Thaddeus Thomas
thaddeus.r.thomas@gmail.com

NCL Fall 2023 Individual Game Scouting Report

Dear Thaddeus Thomas,

Thank you for participating in the National Cyber League (NCL) 2023 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 2023 Fall Season had 9,770 students/players and 588 faculty/coaches from more than 520 two- and four-year schools & 280 high schools across all 50 U.S. states registered to play. The Individual Game Capture the Flag (CTF) event took place from October 20 through October 22. The Team Game CTF event took place from November 3 through November 5. 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/7BQ9VMWCXBYU

CompTIA Based on the the performance detailed in this NCL Scouting Report, you have earned **11 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 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!

Dr. David Zeichick
NCL Commissioner



POWERED BY
CYBER SKYLINE

NATIONAL CYBER LEAGUE SCORE CARD

NCL 2023 FALL INDIVIDUAL GAME

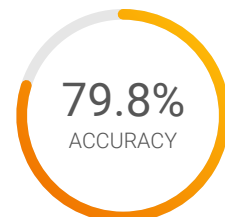
YOUR TOP CATEGORIES

SCANNING &
RECONNAISSANCE
100TH PERCENTILE

WEB APPLICATION
EXPLOITATION
99TH PERCENTILE

ENUMERATION &
EXPLOITATION
99TH PERCENTILE

NATIONAL RANK
169TH PLACE
OUT OF 7879
PERCENTILE
98TH



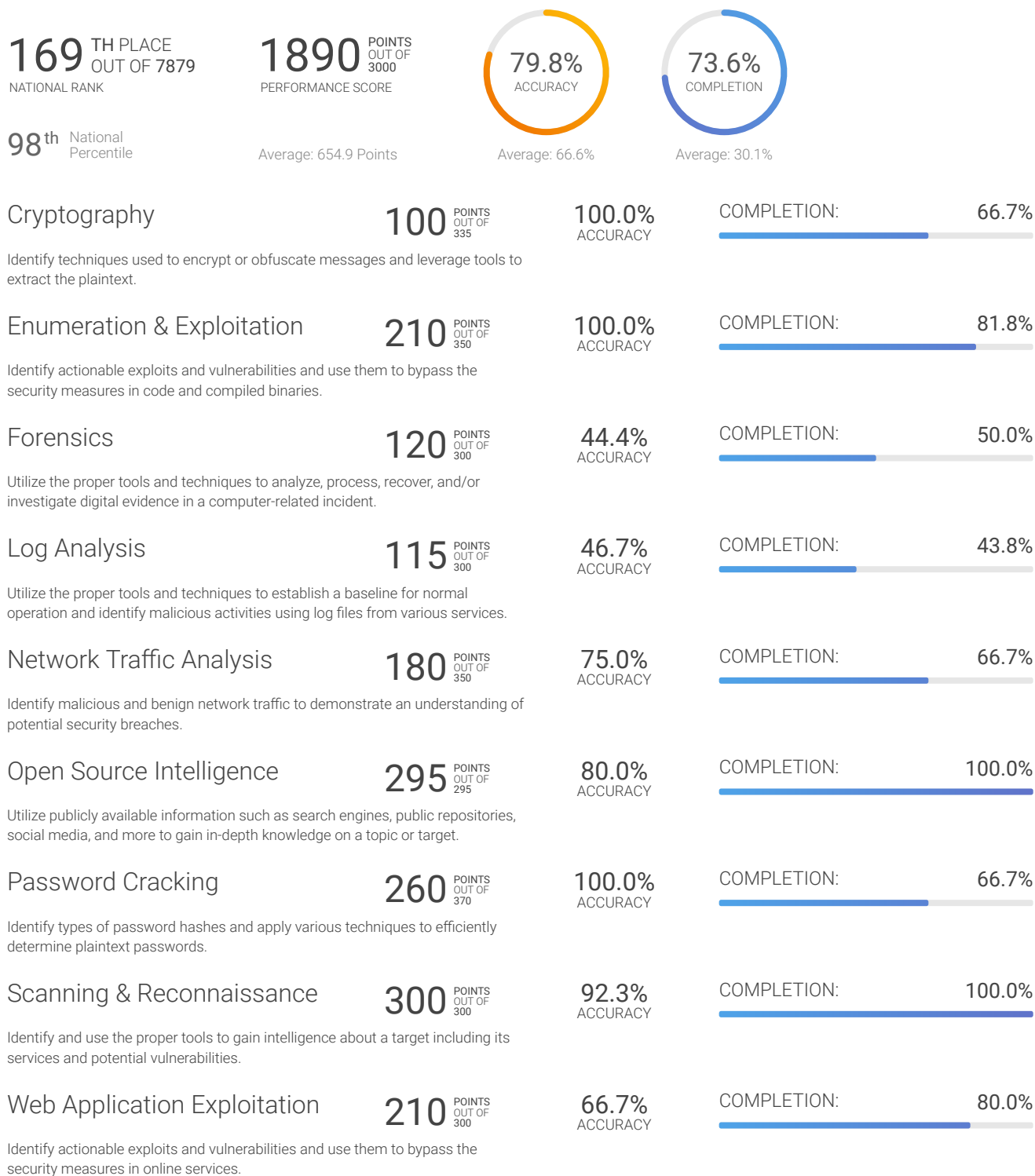
Average: 66.6%

[cyberskyline.com/report](https://cyberskyline.com/report/7BQ9VMWCXBYU)
ID: 7BQ9VMWCXBYU



NCL Fall 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.



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



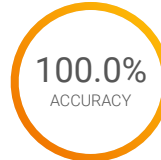


Cryptography Module

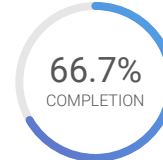
Identify techniques used to encrypt or obfuscate messages and leverage tools to extract the plaintext.

638 TH PLACE
OUT OF 7879
NATIONAL RANK

100 POINTS
OUT OF 335
PERFORMANCE SCORE



Average: 78.4%



Average: 59.4%

TOP NICE WORKROLES

Security Control Assessor
Secure Software Assessor
Exploitation Analyst
Cyber Operator
Security Architect

92nd National
Percentile

Average: 90.5 Points

Bases (Easy)

30 POINTS
OUT OF 30

100.0%
ACCURACY

COMPLETION: **100.0%**

Obtain plaintext from messages encoded with common number bases

Shift (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

Earl (Easy)

40 POINTS
OUT OF 40

100.0%
ACCURACY

COMPLETION: **100.0%**

Obtain plaintext from messages encoded URL encoding

Rulebreaker (Medium)

0 POINTS
OUT OF 60

0.0%
ACCURACY

COMPLETION: **0.0%**

Decipher a classic book cipher and find its source material

Encrypted Flag (Hard)

0 POINTS
OUT OF 75

0.0%
ACCURACY

COMPLETION: **0.0%**

Recover the plaintext of an image that was encrypted with AES

Zoomers (Hard)

0 POINTS
OUT OF 100

0.0%
ACCURACY

COMPLETION: **0.0%**

Perform cryptanalysis and break a custom homophonic cipher





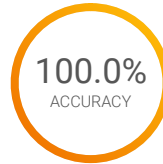
Enumeration & Exploitation Module

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

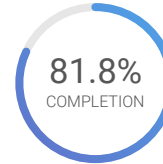
147TH PLACE
OUT OF 7879
NATIONAL RANK

210 POINTS
OUT OF 350
PERFORMANCE SCORE

Average: 81.7 Points



Average: 56.1%



Average: 34.1%

TOP NICE WORKROLES

Cyber Operator
Target Developer
Exploitation Analyst
Software Developer
Systems Security Analyst

99th National
Percentile

Everywhere (Easy)

80 POINTS
OUT OF 80

100.0%
ACCURACY

COMPLETION: **100.0%**

Analyze JavaScript source code to extract an insecurely stored authentication secret

UDP Hijack (Medium)

30 POINTS
OUT OF 80

100.0%
ACCURACY

COMPLETION: **66.7%**

Perform a session hijacking exploit by analyzing a custom network protocol

Throne (Medium)

90 POINTS
OUT OF 90

100.0%
ACCURACY

COMPLETION: **100.0%**

Analyze an obfuscated PowerShell malware using scheduled tasks

Hacktivate (Hard)

10 POINTS
OUT OF 100

100.0%
ACCURACY

COMPLETION: **50.0%**

Reverse engineer a compiled software program with anti-tamper features

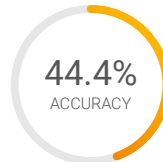
Forensics Module

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

396TH PLACE
OUT OF 7879
NATIONAL RANK

120 POINTS
OUT OF 300
PERFORMANCE SCORE

Average: 66.4 Points



Average: 40.3%



Average: 27.9%

TOP NICE WORKROLES

Cyber Defense Forensics
Analyst
Cyber Crime Investigator
Cyber Defense Incident
Responder
Cyber Defense Analyst

95th National
Percentile

Run (Easy)

100 POINTS
OUT OF 100

66.7%
ACCURACY

COMPLETION: **100.0%**

Extract hidden files within an image using tools like binwalk

Download Manager (Medium)

20 POINTS
OUT OF 100

33.3%
ACCURACY

COMPLETION: **40.0%**

Perform binary data carving on a download manager's metadata file

Redacted (Hard)

0 POINTS
OUT OF 100

0.0%
ACCURACY

COMPLETION: **0.0%**

Programmatically un-blur text in an image to reveal redacted information





Log Analysis Module

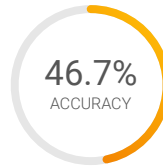
Utilize the proper tools and techniques to establish a baseline for normal operation and identify malicious activities using log files from various services.

227 TH PLACE
OUT OF 7879
NATIONAL RANK

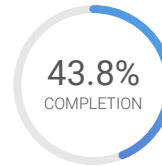
98th National
Percentile

115 POINTS
OUT OF 300
PERFORMANCE SCORE

Average: 53.7 Points



Average: 36.9%



Average: 19.3%

TOP NICE WORKROLES

Cyber Defense Analyst
Systems Security Analyst
All-Source Analyst
Cyber Defense Forensics
Analyst
Data Analyst

Attempt (Easy)

70 POINTS
OUT OF 100

80.0%
ACCURACY

COMPLETION: **80.0%**

Analyze Windows event logs to build a timeline of a malware attack

Oddity (Medium)

45 POINTS
OUT OF 100

37.5%
ACCURACY

COMPLETION: **50.0%**

Analyze a log file encoded with bencode to conduct statistical analysis of network requests

What the C (Hard)

0 POINTS
OUT OF 100

0.0%
ACCURACY

COMPLETION: **0.0%**

Develop a custom method for parsing a non-standard binary log file and conduct statistical analysis

Network Traffic Analysis Module

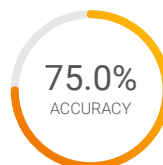
Identify malicious and benign network traffic to demonstrate an understanding of potential security breaches.

505 TH PLACE
OUT OF 7879
NATIONAL RANK

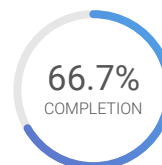
94th National
Percentile

180 POINTS
OUT OF 350
PERFORMANCE SCORE

Average: 100.5 Points



Average: 54.3%



Average: 37.5%

TOP NICE WORKROLES

Cyber Defense Analyst
All-Source Analyst
Cyber Defense Incident
Responder
Target Network Analyst
Cyber Operator

Pong (Easy)

60 POINTS
OUT OF 80

100.0%
ACCURACY

COMPLETION: **83.3%**

Extract ICMP information from a packet capture

HTTPS (Medium)

40 POINTS
OUT OF 100

40.0%
ACCURACY

COMPLETION: **40.0%**

Decrypt and analyze an intercepted TLS packet capture

Cracking (Medium)

70 POINTS
OUT OF 70

80.0%
ACCURACY

COMPLETION: **100.0%**

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

Extraction (Hard)

10 POINTS
OUT OF 100

100.0%
ACCURACY

COMPLETION: **33.3%**

Recover data that was covertly exfiltrated in TCP sequence numbers





Open Source Intelligence Module

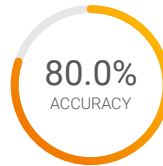
Utilize publicly available information such as search engines, public repositories, social media, and more to gain in-depth knowledge on a topic or target.

257 TH PLACE
OUT OF 7879
NATIONAL RANK

295 POINTS
OUT OF 295
PERFORMANCE SCORE

97th National
Percentile

Average: 166.1 Points



Average: 70.7%



Average: 61.9%

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

PGP Lookup (Easy)

45 POINTS
OUT OF 45

75.0%
ACCURACY

COMPLETION: **100.0%**

Query details of PGP public encryption keys shared online

Undersea (Easy)

70 POINTS
OUT OF 70

77.8%
ACCURACY

COMPLETION: **100.0%**

Conduct open-source target research on a public works project

Certificates (Medium)

45 POINTS
OUT OF 45

75.0%
ACCURACY

COMPLETION: **100.0%**

Query Certificate Transparency tools to audit historic TLS certificates

Electrified (Medium)

70 POINTS
OUT OF 70

100.0%
ACCURACY

COMPLETION: **100.0%**

Identify openly available information on EV charging infrastructure

Liber8tion v. Lawyers (Hard)

50 POINTS
OUT OF 50

66.7%
ACCURACY

COMPLETION: **100.0%**

Identify location of image through reverse image lookup and access publicly available government databases



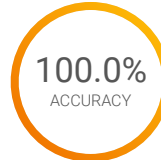


Password Cracking Module

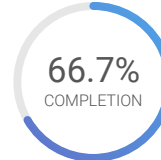
Identify types of password hashes and apply various techniques to efficiently determine plaintext passwords.

229 TH PLACE
OUT OF 7879
NATIONAL RANK

260 POINTS
OUT OF 370
PERFORMANCE SCORE



Average: 87.0%



Average: 31.1%

98th National
Percentile

Average: 109.9 Points

Hashing (Easy)

20 POINTS
OUT OF 20

100.0%
ACCURACY

COMPLETION: **100.0%**

Generate password hashes for MD5, SHA1, SHA256, and SHA512

Rockyou (Easy)

45 POINTS
OUT OF 45

100.0%
ACCURACY

COMPLETION: **100.0%**

Crack MD5 password hashes for password found in the rockyou breach

Windows (Easy)

45 POINTS
OUT OF 45

100.0%
ACCURACY

COMPLETION: **100.0%**

Crack Windows NTLM password hashes using rainbow tables

Flag Format (Medium)

60 POINTS
OUT OF 60

100.0%
ACCURACY

COMPLETION: **100.0%**

Build a wordlist or pattern rule to crack password hashes of a known pattern

Cities (Medium)

90 POINTS
OUT OF 100

100.0%
ACCURACY

COMPLETION: **90.0%**

Build a wordlist to crack passwords not found in common wordlists

Red Carpet (Hard)

0 POINTS
OUT OF 100

0.0%
ACCURACY

COMPLETION: **0.0%**

Build a wordlist to crack passwords not found in common wordlists and augment with rules for special characters





Scanning & Reconnaissance Module

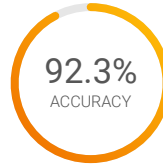
Identify and use the proper tools to gain intelligence about a target including its services and potential vulnerabilities.

70TH PLACE
OUT OF 7879
NATIONAL RANK

100th National
Percentile

300 POINTS
OUT OF 300
PERFORMANCE SCORE

Average: 158.3 Points



Average: 60.7%



Average: 59.5%

TOP NICE WORKROLES

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

Scan (Easy)

100 POINTS
OUT OF 100

100.0%
ACCURACY

COMPLETION: **100.0%**

Scan a remote host for open ports and identify running services

Masscan (Medium)

100 POINTS
OUT OF 100

85.7%
ACCURACY

COMPLETION: **100.0%**

Analyze the results of a large scale Internet scan from the masscan tool

Message (Hard)

100 POINTS
OUT OF 100

100.0%
ACCURACY

COMPLETION: **100.0%**

Capture network traffic sent to a server using tools such as tcpdump

Web Application Exploitation Module

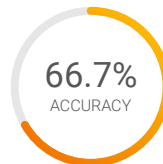
Identify actionable exploits and vulnerabilities and use them to bypass the security measures in online services.

117TH PLACE
OUT OF 7879
NATIONAL RANK

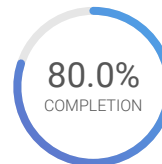
99th National
Percentile

210 POINTS
OUT OF 300
PERFORMANCE SCORE

Average: 69.1 Points



Average: 39.9%



Average: 26.1%

TOP NICE WORKROLES

Cyber Operator
Software Developer
Exploitation Analyst
Systems Security Analyst
Database Administrator

Witter (Easy)

100 POINTS
OUT OF 100

100.0%
ACCURACY

COMPLETION: **100.0%**

De-obfuscate client side JavaScript code and exploit a social media service

Login (Medium)

100 POINTS
OUT OF 100

100.0%
ACCURACY

COMPLETION: **100.0%**

Conduct SQL injection against an authentication service to sign in as admin

Cryptographic Lottery (Hard)

10 POINTS
OUT OF 100

33.3%
ACCURACY

COMPLETION: **50.0%**

Exploit a Hash-Based Message Authentication Code using an MD5 length extension attack





POWERED BY
CYBER SKYLINE

The National Cyber League
A Community Where Cybersecurity Is a Passion

Thaddeus Thomas
thaddeus.r.thomas@gmail.com

NCL Fall 2023 Team Game Scouting Report

Dear Thaddeus Thomas (Team "Ctrl+Alt+Defeat"),

Thank you for participating in the National Cyber League (NCL) 2023 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 2023 Fall Season had 9,770 students/players and 591 faculty/coaches from more than 510 two- and four-year schools & 270 high schools across all 50 U.S. states registered to play. The Individual Game Capture the Flag (CTF) event took place from October 20 through October 22. The Team Game CTF event took place from November 3 through November 5. 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/J20325HDKKH7

Congratulations for your participation in the NCL 2023 Fall Team 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



POWERED BY
CYBER SKYLINE

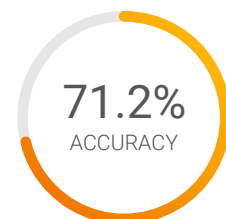
NATIONAL CYBER LEAGUE SCORE CARD

NCL 2023 FALL TEAM GAME

YOUR TOP CATEGORIES



NATIONAL RANK
182ND PLACE
OUT OF 4672
PERCENTILE
97TH



Average: 50.1%

cyberskyline.com/report/J20325HDKKH7

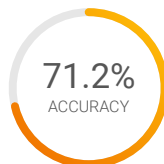


NCL Fall 2023 Team Game

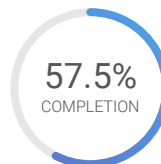
The NCL Team Game is designed for student players nationwide to compete in realtime in the categories listed below. The Team Game promotes camaraderie and evaluates the collective technical cybersecurity skills of the team members.

182 ND PLACE
OUT OF 4672
NATIONAL RANK

1210 POINTS
OUT OF 3000
PERFORMANCE SCORE



Average: 50.1%



Average: 31.7%

97th National
Percentile

Average: 683.9 Points

Cryptography

130 POINTS
OUT OF 335

87.5%
ACCURACY

COMPLETION: **63.6%**

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

Enumeration & Exploitation

120 POINTS
OUT OF 300

100.0%
ACCURACY

COMPLETION: **66.7%**

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

Forensics

120 POINTS
OUT OF 300

71.4%
ACCURACY

COMPLETION: **41.7%**

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

Log Analysis

140 POINTS
OUT OF 300

76.5%
ACCURACY

COMPLETION: **72.2%**

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

220 POINTS
OUT OF 360

57.7%
ACCURACY

COMPLETION: **75.0%**

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

Open Source Intelligence

180 POINTS
OUT OF 345

65.5%
ACCURACY

COMPLETION: **86.4%**

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

50 POINTS
OUT OF 360

100.0%
ACCURACY

COMPLETION: **20.6%**

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

Scanning & Reconnaissance

130 POINTS
OUT OF 300

64.7%
ACCURACY

COMPLETION: **64.7%**

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

Web Application Exploitation

120 POINTS
OUT OF 300

100.0%
ACCURACY

COMPLETION: **60.0%**

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.





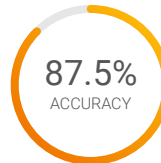
Cryptography Module

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

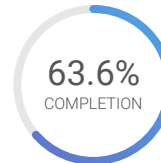
307TH PLACE
OUT OF 4672
NATIONAL RANK

130 POINTS
OUT OF 335
PERFORMANCE SCORE

Average: 115.0 Points



Average: 59.3%



Average: 54.0%

TOP NICE WORKROLES

Security Control Assessor
Secure Software Assessor
Exploitation Analyst
Cyber Operator
Security Architect

Salad (Easy)

30 POINTS
OUT OF 30

100.0%
ACCURACY

COMPLETION: **100.0%**

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

Beep Beep (Easy)

30 POINTS
OUT OF 30

100.0%
ACCURACY

COMPLETION: **100.0%**

Analyze and obtain the plaintext for a message encoded with Morse code

Someone Cooked (Medium)

0 POINTS
OUT OF 50

0.0%
ACCURACY

COMPLETION: **0.0%**

Analyze and obtain the plaintext for a message with multiple layers of encoding

Roots (Medium)

50 POINTS
OUT OF 50

50.0%
ACCURACY

COMPLETION: **100.0%**

Interpret the Logo programming language to extract hidden information

Pretty Good Signature (Hard)

0 POINTS
OUT OF 75

0.0%
ACCURACY

COMPLETION: **0.0%**

Identify fraudulent emails through the use of PGP signature verification

Boomers (Hard)

20 POINTS
OUT OF 100

100.0%
ACCURACY

COMPLETION: **50.0%**

Decipher the plaintext for a message encrypted with a Sudoku cipher





Enumeration & Exploitation Module

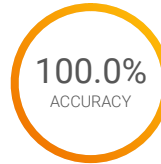
Identify actionable exploits and vulnerabilities and use them to bypass the security measures in code and compiled binaries.

35TH PLACE
OUT OF 4672
NATIONAL RANK

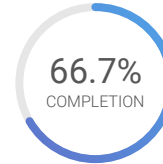
100th National
Percentile

120 POINTS
OUT OF 300
PERFORMANCE SCORE

Average: 58.8 Points



Average: 54.4%



Average: 33.2%

TOP NICE WORKROLES

Cyber Operator
Target Developer
Exploitation Analyst
Software Developer
Systems Security Analyst

Espionage (Easy)

Be able to read and decipher OCaml Code and recognize bitwise operations

100 POINTS
OUT OF 100

100.0%
ACCURACY

COMPLETION: **100.0%**

Bytecode (Medium)

Decompile and analyze the bytecode for Ruby to reverse engineer the authentication scheme

20 POINTS
OUT OF 100

100.0%
ACCURACY

COMPLETION: **66.7%**

Journal (Hard)

Reverse engineer a compiled binary and exploit a TOCTOU (Time-of-Check Time-of-Use) vulnerability to escalate user privileges

0 POINTS
OUT OF 100

0.0%
ACCURACY

COMPLETION: **0.0%**

Forensics Module

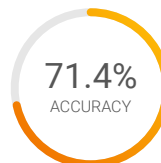
Utilize the proper tools and techniques to analyze, process, recover, and/or investigate digital evidence in a computer-related incident.

121ST PLACE
OUT OF 4672
NATIONAL RANK

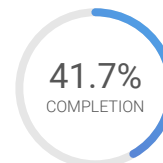
98th National
Percentile

120 POINTS
OUT OF 300
PERFORMANCE SCORE

Average: 63.0 Points



Average: 46.0%



Average: 26.8%

TOP NICE WORKROLES

Cyber Defense Forensics
Analyst
Cyber Crime Investigator
Cyber Defense Incident
Responder
Cyber Defense Analyst

Seek (Easy)

Identify tampered files on an NTFS file system through forensic analysis of the Master File Table

20 POINTS
OUT OF 100

100.0%
ACCURACY

COMPLETION: **66.7%**

Art (Medium)

Reconstruct a file from a binary data stream by following the specification for a custom file format

100 POINTS
OUT OF 100

60.0%
ACCURACY

COMPLETION: **100.0%**

The Book (Hard)

Analyze and search through a live Windows memory dump to extract the SQL database from memory

0 POINTS
OUT OF 100

0.0%
ACCURACY

COMPLETION: **0.0%**





Log Analysis Module

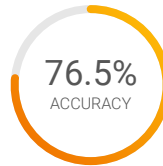
Utilize the proper tools and techniques to establish a baseline for normal operation and identify malicious activities using log files from various services.

236 TH PLACE
OUT OF 4672
NATIONAL RANK

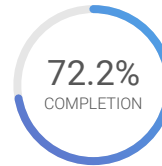
95th National
Percentile

140 POINTS
OUT OF 300
PERFORMANCE SCORE

Average: 111.8 Points



Average: 42.2%



Average: 49.7%

TOP NICE WORKROLES

Cyber Defense Analyst
Systems Security Analyst
All-Source Analyst
Cyber Defense Forensics
Analyst
Data Analyst

Wardriving (Easy)

Parse a wardriving log to identify WiFi and Bluetooth network beacons

100 POINTS
OUT OF 100

90.0%
ACCURACY

COMPLETION: **100.0%**

Mobile (Medium)

Dissect an Android log to identify historic user activity on the device

10 POINTS
OUT OF 100

33.3%
ACCURACY

COMPLETION: **20.0%**

Za (Hard)

Analyze a Windows Sysmon log to identify the file that was covertly exfiltrated via DNS query packets

30 POINTS
OUT OF 100

75.0%
ACCURACY

COMPLETION: **75.0%**

Network Traffic Analysis Module

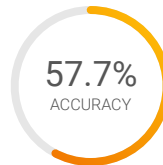
Identify malicious and benign network traffic to demonstrate an understanding of potential security breaches.

181 ST PLACE
OUT OF 4672
NATIONAL RANK

97th National
Percentile

220 POINTS
OUT OF 360
PERFORMANCE SCORE

Average: 143.9 Points



Average: 37.5%



Average: 48.4%

TOP NICE WORKROLES

Cyber Defense Analyst
All-Source Analyst
Cyber Defense Incident
Responder
Target Network Analyst
Cyber Operator

Next Gen (Easy)

Analyze and identify the layout of an IPv6 network

90 POINTS
OUT OF 90

62.5%
ACCURACY

COMPLETION: **100.0%**

The Webz (Medium)

Analyze Border Gateway Protocol (BGP) traffic to identify automatic route discovery mechanisms

100 POINTS
OUT OF 100

66.7%
ACCURACY

COMPLETION: **100.0%**

Router (Medium)

Decrypt a WiFi packet capture and extract the contents of the network traffic

10 POINTS
OUT OF 70

40.0%
ACCURACY

COMPLETION: **33.3%**

Looking Glass (Hard)

Analyze and extract raw H.264 video from a wireless Android screen recording

20 POINTS
OUT OF 100

50.0%
ACCURACY

COMPLETION: **66.7%**





Open Source Intelligence Module

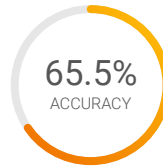
Utilize publicly available information such as search engines, public repositories, social media, and more to gain in-depth knowledge on a topic or target.

468 TH PLACE
OUT OF 4672
NATIONAL RANK

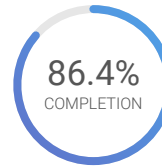
180 POINTS
OUT OF 345
PERFORMANCE SCORE

90th National
Percentile

Average: 189.1 Points



Average: 53.2%



Average: 76.4%

TOP NICE WORKROLES

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

Rules of Conduct (Easy)

25 POINTS
OUT OF 25

100.0%
ACCURACY

COMPLETION: **100.0%**

Introductory challenge on acceptable conduct during NCL

Park (Easy)

45 POINTS
OUT OF 45

100.0%
ACCURACY

COMPLETION: **100.0%**

Extract EXIF metadata from a JPEG file to determine geolocation

X Marks the Spot (Easy)

60 POINTS
OUT OF 60

50.0%
ACCURACY

COMPLETION: **100.0%**

Identify characteristics of the 2020 Twitter hack from government reports

Reputation (Medium)

40 POINTS
OUT OF 40

40.0%
ACCURACY

COMPLETION: **100.0%**

Reverse lookup IP addresses to identify the name of the VPN service providers

Airport (Medium)

10 POINTS
OUT OF 75

100.0%
ACCURACY

COMPLETION: **50.0%**

Identify the geolocation of an image without the EXIF metadata

Gotta Go Fast (Hard)

0 POINTS
OUT OF 100

0.0%
ACCURACY

COMPLETION: **0.0%**

Analyze a series of locations to identify the commonality between them and extrapolate another likely target location



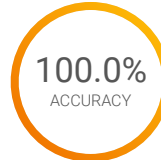


Password Cracking Module

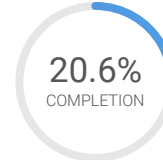
Identify types of password hashes and apply various techniques to efficiently determine plaintext passwords.

162 ND PLACE
OUT OF 4672
NATIONAL RANK

50 POINTS
OUT OF 360
PERFORMANCE SCORE



Average: 82.2%



Average: 18.2%

97th National
Percentile

Average: 44.4 Points

Hashing (Easy)

20 POINTS
OUT OF 20

100.0%
ACCURACY

COMPLETION: **100.0%**

Generate password hashes for MD5, SHA1, SHA256, and SHA512

International (Easy)

30 POINTS
OUT OF 30

100.0%
ACCURACY

COMPLETION: **100.0%**

Build a wordlist or pattern rule to crack password hashes of a known pattern

WPA (Medium)

0 POINTS
OUT OF 50

0.0%
ACCURACY

COMPLETION: **0.0%**

Research and crack WiFi passwords saved in a wpa_supplicant.conf file

Monsters (Medium)

0 POINTS
OUT OF 100

0.0%
ACCURACY

COMPLETION: **0.0%**

Build a wordlist to crack passwords not found in common password wordlists

Speakeasy (Medium)

0 POINTS
OUT OF 60

0.0%
ACCURACY

COMPLETION: **0.0%**

Build a wordlist or pattern rule to crack passwords with leet speak character replacements

Say My Name (Hard)

0 POINTS
OUT OF 100

0.0%
ACCURACY

COMPLETION: **0.0%**

Build a wordlist to crack passwords not found in common wordlists and augment with rules for special characters





Scanning & Reconnaissance Module

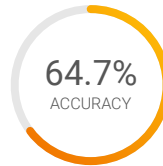
Identify and use the proper tools to gain intelligence about a target including its services and potential vulnerabilities.

110 TH PLACE
OUT OF 4672
NATIONAL RANK

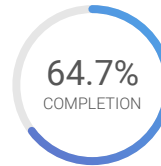
98th National
Percentile

130 POINTS
OUT OF 300
PERFORMANCE SCORE

Average: 70.3 Points



Average: 44.8%



Average: 29.9%

TOP NICE WORKROLES

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

Knock (Easy)

Run a TCP and UDP scan to identify running services and utilize port knocking to access a hidden service

20 POINTS
OUT OF 100

40.0%
ACCURACY

COMPLETION: **33.3%**

SSH Server (Medium)

Utilize Public Key Infrastructure to generate valid SSH authentication certificates from a Certificate Authority

10 POINTS
OUT OF 100

50.0%
ACCURACY

COMPLETION: **33.3%**

Academic Papers (Hard)

Analyze the history and metadata of a Docker image to identify information stored in the container

100 POINTS
OUT OF 100

80.0%
ACCURACY

COMPLETION: **100.0%**

Web Application Exploitation Module

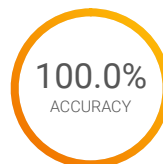
Identify actionable exploits and vulnerabilities and use them to bypass the security measures in online services.

45 TH PLACE
OUT OF 4672
NATIONAL RANK

100th National
Percentile

120 POINTS
OUT OF 300
PERFORMANCE SCORE

Average: 32.6 Points



Average: 39.8%



Average: 26.0%

TOP NICE WORKROLES

Cyber Operator
Software Developer
Exploitation Analyst
Systems Security Analyst
Database Administrator

Secure Banking (Easy)

Identify the vulnerability that leaks an API token and utilize it in an account takeover attack

100 POINTS
OUT OF 100

100.0%
ACCURACY

COMPLETION: **100.0%**

LowLine (Medium)

Exploit a known vulnerability in the JavaScript Lodash library (CVE-2021-23337) to extract sensitive server side data

20 POINTS
OUT OF 100

100.0%
ACCURACY

COMPLETION: **50.0%**

Toms Fan Club v2 (Hard)

Analyze and conduct an assessment on a web application that uses a custom HTTP upgrade procedure

0 POINTS
OUT OF 100

0.0%
ACCURACY

COMPLETION: **0.0%**





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CYBER SKYLINE

The National Cyber League
A Community Where Cybersecurity Is a Passion

Thaddeus Thomas
thaddeus.r.thomas@gmail.com

NCL Spring 2023 Individual Game Scouting Report

Dear Thaddeus Thomas,

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.

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- 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/C9RA4F3CCXKG

CompTIA Based on the the performance detailed in this NCL Scouting Report, you have earned **11 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



POWERED BY
CYBER SKYLINE

NATIONAL CYBER LEAGUE SCORE CARD

NCL 2023 SPRING INDIVIDUAL GAME

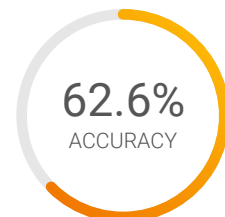
YOUR TOP CATEGORIES

**PASSWORD
CRACKING**
100TH PERCENTILE

CRYPTOGRAPHY
99TH PERCENTILE

**SCANNING &
RECONNAISSANCE**
96TH PERCENTILE

NATIONAL RANK
223RD PLACE
OUT OF 6273
PERCENTILE
97TH



Average: 67.0%

[cyberskyline.com/report](https://cyberskyline.com/report/C9RA4F3CCXKG)
ID: C9RA4F3CCXKG

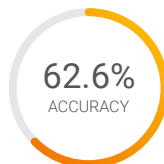


NCL Spring 2023 Individual Game

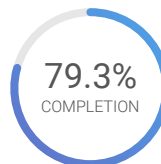
The NCL Individual Game is designed for student players nationwide to compete in realtime in the categories listed below. The Individual Game evaluates the technical cybersecurity skills of the individual, without the assistance of others.

223 RD PLACE
OUT OF 6273
NATIONAL RANK

1820 POINTS
OUT OF 3000
PERFORMANCE SCORE



Average: 67.0%



Average: 38.0%

97th National
Percentile

Average: 816.2 Points

Cryptography

285 POINTS
OUT OF 360

40.7%
ACCURACY

COMPLETION: **84.6%**

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

Enumeration & Exploitation

120 POINTS
OUT OF 300

50.0%
ACCURACY

COMPLETION: **77.8%**

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

Forensics

175 POINTS
OUT OF 300

46.2%
ACCURACY

COMPLETION: **66.7%**

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

Log Analysis

110 POINTS
OUT OF 300

42.9%
ACCURACY

COMPLETION: **54.5%**

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

230 POINTS
OUT OF 370

47.8%
ACCURACY

COMPLETION: **78.6%**

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

Open Source Intelligence

310 POINTS
OUT OF 310

86.4%
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

325 POINTS
OUT OF 360

100.0%
ACCURACY

COMPLETION: **95.5%**

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

Scanning & Reconnaissance

155 POINTS
OUT OF 300

81.8%
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

10 POINTS
OUT OF 300

100.0%
ACCURACY

COMPLETION: **16.7%**

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.





Cryptography Module

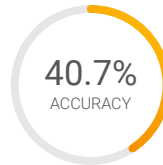
Identify techniques used to encrypt or obfuscate messages and leverage tools to extract the plaintext.

111 TH PLACE
OUT OF 6273
NATIONAL RANK

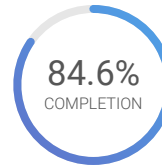
285 POINTS
OUT OF 360
PERFORMANCE SCORE

99th National
Percentile

Average: 115.0 Points



Average: 77.2%



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)

50 POINTS
OUT OF 50

21.4%
ACCURACY

COMPLETION: **100.0%**

Analyze the cryptographic weakness of a ECB encrypted image

PGP (Medium)

75 POINTS
OUT OF 75

20.0%
ACCURACY

COMPLETION: **100.0%**

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)

75 POINTS
OUT OF 75

50.0%
ACCURACY

COMPLETION: **100.0%**

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





Enumeration & Exploitation Module

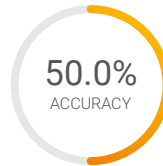
Identify actionable exploits and vulnerabilities and use them to bypass the security measures in code and compiled binaries.

828 TH PLACE
OUT OF 6273
NATIONAL RANK

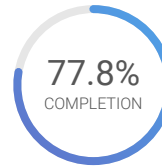
87th National
Percentile

120 POINTS
OUT OF 300
PERFORMANCE SCORE

Average: 98.8 Points



Average: 53.9%



Average: 58.8%

TOP NICE WORKROLES

Cyber Operator
Target Developer
Exploitation Analyst
Software Developer
Systems Security Analyst

Dropper (Easy)

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

100 POINTS
OUT OF 100

50.0%
ACCURACY

COMPLETION: 100.0%

Ground floor (Medium)

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

20 POINTS
OUT OF 100

50.0%
ACCURACY

COMPLETION: 50.0%

Memfrob (Hard)

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

0 POINTS
OUT OF 100

0.0%
ACCURACY

COMPLETION: 0.0%

Forensics Module

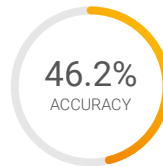
Utilize the proper tools and techniques to analyze, process, recover, and/or investigate digital evidence in a computer-related incident.

352 ND PLACE
OUT OF 6273
NATIONAL RANK

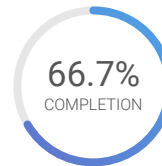
95th National
Percentile

175 POINTS
OUT OF 300
PERFORMANCE SCORE

Average: 128.7 Points



Average: 57.4%



Average: 43.4%

TOP NICE WORKROLES

Cyber Defense Forensics
Analyst
Cyber Crime Investigator
Cyber Defense Incident
Responder
Cyber Defense Analyst

Lost (Easy)

Recover files from the recycling bin of a Windows filesystem

100 POINTS
OUT OF 100

100.0%
ACCURACY

COMPLETION: 100.0%

Fruit (Medium)

Recover configuration data from a macOS plist file

75 POINTS
OUT OF 100

57.1%
ACCURACY

COMPLETION: 80.0%

Headless (Hard)

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

0 POINTS
OUT OF 100

0.0%
ACCURACY

COMPLETION: 0.0%





Log Analysis Module

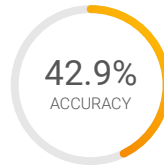
Utilize the proper tools and techniques to establish a baseline for normal operation and identify malicious activities using log files from various services.

342 ND PLACE
OUT OF 6273
NATIONAL RANK

95th National
Percentile

110 POINTS
OUT OF 300
PERFORMANCE SCORE

Average: 65.6 Points



Average: 37.6%



Average: 32.9%

TOP NICE WORKROLES

Cyber Defense Analyst
Systems Security Analyst
All-Source Analyst
Cyber Defense Forensics
Analyst
Data Analyst

Web (Easy)

Analyze a web server log and identify traffic patterns

100 POINTS
OUT OF 100

71.4%
ACCURACY

COMPLETION: **100.0%**

Email Compromise (Medium)

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

10 POINTS
OUT OF 100

16.7%
ACCURACY

COMPLETION: **25.0%**

Fraud (Hard)

Analyze a payment log to identify what account had fraudulent purchases

0 POINTS
OUT OF 100

0.0%
ACCURACY

COMPLETION: **0.0%**



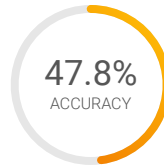


Network Traffic Analysis Module

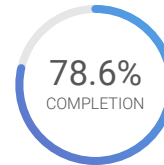
Identify malicious and benign network traffic to demonstrate an understanding of potential security breaches.

391 ST PLACE
OUT OF 6273
NATIONAL RANK

230 POINTS
OUT OF 370
PERFORMANCE SCORE



Average: 52.4%



Average: 46.9%

TOP NICE WORKROLES

Cyber Defense Analyst
All-Source Analyst
Cyber Defense Incident
Responder
Target Network Analyst
Cyber Operator

94th National
Percentile

Average: 133.0 Points

Information (Easy)

100 POINTS
OUT OF 100

100.0%
ACCURACY

COMPLETION: **100.0%**

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)

100 POINTS
OUT OF 100

33.3%
ACCURACY

COMPLETION: **100.0%**

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

33.3%
ACCURACY

COMPLETION: **33.3%**

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





Open Source Intelligence Module

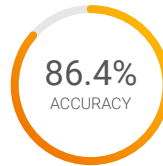
Utilize publicly available information such as search engines, public repositories, social media, and more to gain in-depth knowledge on a topic or target.

480 TH PLACE
OUT OF 6273
NATIONAL RANK

310 POINTS
OUT OF 310
PERFORMANCE SCORE

93rd National
Percentile

Average: 215.7 Points



Average: 80.0%



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

100.0%
ACCURACY

COMPLETION: **100.0%**

Introductory challenge on acceptable conduct during NCL

Waypoints (Easy)

50 POINTS
OUT OF 50

83.3%
ACCURACY

COMPLETION: **100.0%**

Identify openly available information on navigation waypoints

Document (Medium)

50 POINTS
OUT OF 50

100.0%
ACCURACY

COMPLETION: **100.0%**

Extract the fields from the machine-readable zone of a passport

Esoteric (Medium)

50 POINTS
OUT OF 50

66.7%
ACCURACY

COMPLETION: **100.0%**

Identify the esoteric alphabet used to hide a secret message

Greek (Medium)

70 POINTS
OUT OF 70

100.0%
ACCURACY

COMPLETION: **100.0%**

Identify the location of a photograph using reverse image search

Numbers (Hard)

75 POINTS
OUT OF 75

75.0%
ACCURACY

COMPLETION: **100.0%**

Identify the scheme of a set of numbers without a well known format





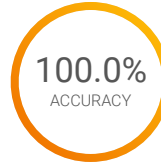
Password Cracking Module

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

3RD PLACE
OUT OF 6273
NATIONAL RANK

325 POINTS
OUT OF 360
PERFORMANCE SCORE

Average: 133.2 Points



Average: 87.3%



Average: 45.5%

TOP NICE WORKROLES

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

100th National
Percentile

Hashing (Easy)

30 POINTS
OUT OF 30

100.0%
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)

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 5 (Hard)

65 POINTS
OUT OF 100

100.0%
ACCURACY

COMPLETION: **80.0%**

Build a wordlist to crack passwords not found in common wordlists

PDF (Medium)

50 POINTS
OUT OF 50

100.0%
ACCURACY

COMPLETION: **100.0%**

Crack the password for a protected PDF file





Scanning & Reconnaissance Module

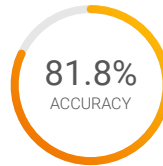
Identify and use the proper tools to gain intelligence about a target including its services and potential vulnerabilities.

313 TH PLACE
OUT OF 6273
NATIONAL RANK

96th National
Percentile

155 POINTS
OUT OF 300
PERFORMANCE SCORE

Average: 111.6 Points



Average: 70.1%



Average: 43.7%

TOP NICE WORKROLES

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

Ports (Easy)

Scan a remote host for open ports and identify running services

100 POINTS
OUT OF 100

100.0%
ACCURACY

COMPLETION: **100.0%**

Who (Medium)

Enumerate the possible domains on a WHOIS server to extract information

0 POINTS
OUT OF 100

0.0%
ACCURACY

COMPLETION: **0.0%**

Metadata (Hard)

Scan an AWS EC2 Metadata Service to extract information about the instance

55 POINTS
OUT OF 100

66.7%
ACCURACY

COMPLETION: **80.0%**

Web Application Exploitation Module

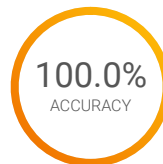
Identify actionable exploits and vulnerabilities and use them to bypass the security measures in online services.

709 TH PLACE
OUT OF 6273
NATIONAL RANK

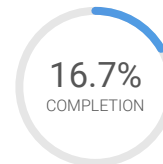
89th National
Percentile

10 POINTS
OUT OF 300
PERFORMANCE SCORE

Average: 33.0 Points



Average: 39.7%



Average: 20.0%

TOP NICE WORKROLES

Cyber Operator
Software Developer
Exploitation Analyst
Systems Security Analyst
Database Administrator

Shopping (Easy)

Exploit an implicit type conversion vulnerability in an express application

10 POINTS
OUT OF 100

100.0%
ACCURACY

COMPLETION: **50.0%**

Attack Portal (Medium)

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

0 POINTS
OUT OF 100

0.0%
ACCURACY

COMPLETION: **0.0%**

File Server (Hard)

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

0 POINTS
OUT OF 100

0.0%
ACCURACY

COMPLETION: **0.0%**





POWERED BY
CYBER SKYLINE

The National Cyber League
A Community Where Cybersecurity Is a Passion

Thaddeus Thomas
thaddeus.r.thomas@gmail.com

NCL Spring 2023 Team Game Scouting Report

Dear Thaddeus Thomas (Team "IveBeenPwned"),

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/BD7H6T6G7LP9

Congratulations for your participation in the NCL 2023 Spring Team 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



POWERED BY
CYBER SKYLINE

NATIONAL CYBER LEAGUE SCORE CARD

NCL 2023 SPRING TEAM GAME

YOUR TOP CATEGORIES

WEB APPLICATION
EXPLOITATION
100TH PERCENTILE

LOG ANALYSIS
99TH PERCENTILE

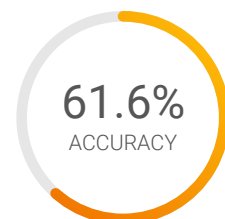
CRYPTOGRAPHY
98TH PERCENTILE

NATIONAL RANK

**83RD PLACE
OUT OF 3593**

PERCENTILE

98TH



Average: 61.7%

cyberskyline.com/report/BD7H6T6G7LP9

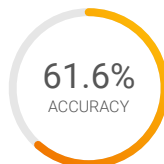


NCL Spring 2023 Team Game

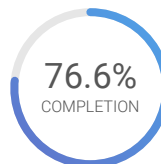
The NCL Team Game is designed for student players nationwide to compete in realtime in the categories listed below. The Team Game promotes camaraderie and evaluates the collective technical cybersecurity skills of the team members.

83 RD PLACE
OUT OF 3593
NATIONAL RANK

1940 POINTS
OUT OF 3000
PERFORMANCE SCORE



Average: 61.7%



Average: 35.9%

98th National
Percentile

Average: 834.7 Points

Cryptography

205 POINTS
OUT OF 355

90.0%
ACCURACY

COMPLETION: **75.0%**

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

Enumeration & Exploitation

110 POINTS
OUT OF 300

66.7%
ACCURACY

COMPLETION: **66.7%**

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

Forensics

135 POINTS
OUT OF 300

17.4%
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

300 POINTS
OUT OF 300

71.4%
ACCURACY

COMPLETION: **100.0%**

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 365

52.6%
ACCURACY

COMPLETION: **58.8%**

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

Open Source Intelligence

350 POINTS
OUT OF 350

50.0%
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

210 POINTS
OUT OF 330

93.3%
ACCURACY

COMPLETION: **82.4%**

Try your hand at cracking these passwords.

Scanning & Reconnaissance

230 POINTS
OUT OF 300

100.0%
ACCURACY

COMPLETION: **70.0%**

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

Web Application Exploitation

130 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.



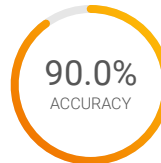


Cryptography Module

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

94TH PLACE
OUT OF 3593
NATIONAL RANK

205 POINTS
OUT OF 355
PERFORMANCE SCORE



Average: 65.8%



Average: 50.8%

TOP NICE WORKROLES

Security Control Assessor
Secure Software Assessor
Exploitation Analyst
Cyber Operator
Security Architect

98th National
Percentile

Average: 114.5 Points

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 (Easy)

30 POINTS
OUT OF 30

50.0%
ACCURACY

COMPLETION: **100.0%**

Obtain the plaintext of a message using a keypad cipher

Decoding 4 (Medium)

0 POINTS
OUT OF 50

0.0%
ACCURACY

COMPLETION: **0.0%**

Decrypt an AES encrypted message with a known password

PGP (Medium)

50 POINTS
OUT OF 50

100.0%
ACCURACY

COMPLETION: **100.0%**

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

Beep Boop (Medium)

65 POINTS
OUT OF 65

100.0%
ACCURACY

COMPLETION: **100.0%**

Analyze an audio file and decode a message that is encoded with dual-tone multi-frequency signaling

AutoCrypt (Hard)

0 POINTS
OUT OF 100

0.0%
ACCURACY

COMPLETION: **0.0%**

Analyze a cryptographic scheme and find the vulnerability in an autokey cipher to decrypt the message





Enumeration & Exploitation Module

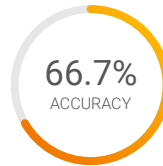
Identify actionable exploits and vulnerabilities and use them to bypass the security measures in code and compiled binaries.

157TH PLACE
OUT OF 3593
NATIONAL RANK

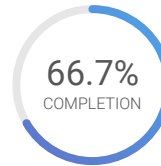
96th National
Percentile

110 POINTS
OUT OF 300
PERFORMANCE SCORE

Average: 75.7 Points



Average: 56.9%



Average: 46.4%

TOP NICE WORKROLES

Cyber Operator
Target Developer
Exploitation Analyst
Software Developer
Systems Security Analyst

Shinny Stone (Easy)

Analyze Ruby source code to decrypt a message that was encrypted using AES

100 POINTS
OUT OF 100

100.0%
ACCURACY

COMPLETION: **100.0%**

Vault (Medium)

Extract and analyze a compiled Python file from a macOS mach-o binary

10 POINTS
OUT OF 100

50.0%
ACCURACY

COMPLETION: **50.0%**

Crypto Coincidence (Hard)

Analyze a compiled C binary and bypass its custom encryption and packing

0 POINTS
OUT OF 100

0.0%
ACCURACY

COMPLETION: **0.0%**

Forensics Module

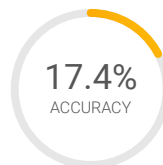
Utilize the proper tools and techniques to analyze, process, recover, and/or investigate digital evidence in a computer-related incident.

141ST PLACE
OUT OF 3593
NATIONAL RANK

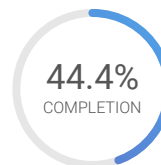
97th National
Percentile

135 POINTS
OUT OF 300
PERFORMANCE SCORE

Average: 96.9 Points



Average: 59.1%



Average: 34.2%

TOP NICE WORKROLES

Cyber Defense Forensics
Analyst
Cyber Crime Investigator
Cyber Defense Incident
Responder
Cyber Defense Analyst

Stacked (Easy)

Find and extract hidden files within an image using tools like binwalk

100 POINTS
OUT OF 100

100.0%
ACCURACY

COMPLETION: **100.0%**

Hidden (Medium)

Extract hidden information from a macOS .DS_STORE file

35 POINTS
OUT OF 100

9.5%
ACCURACY

COMPLETION: **50.0%**

Memory (Hard)

Analyze a Linux memory dump using tools like Volatility to extract encryption keys from a Vim buffer and decrypt an in-memory encrypted file

0 POINTS
OUT OF 100

0.0%
ACCURACY

COMPLETION: **0.0%**





Log Analysis Module

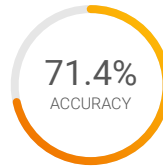
Utilize the proper tools and techniques to establish a baseline for normal operation and identify malicious activities using log files from various services.

47TH PLACE
OUT OF 3593
NATIONAL RANK

99th National
Percentile

300 POINTS
OUT OF 300
PERFORMANCE SCORE

Average: 138.2 Points



Average: 57.5%



Average: 51.2%

TOP NICE WORKROLES

Cyber Defense Analyst
Systems Security Analyst
All-Source Analyst
Cyber Defense Forensics
Analyst
Data Analyst

PGP (Easy)

Analyze clear-signed documents to verify their authenticity using PGP keys

100 POINTS
OUT OF 100

100.0%
ACCURACY

COMPLETION: **100.0%**

Iptables (Medium)

Analyze a iptables log file to identify network traffic patterns

100 POINTS
OUT OF 100

50.0%
ACCURACY

COMPLETION: **100.0%**

Flight Record (Hard)

Parse a binary encoded drone flight record file and extract its fields

100 POINTS
OUT OF 100

88.9%
ACCURACY

COMPLETION: **100.0%**

Network Traffic Analysis Module

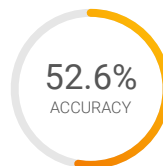
Identify malicious and benign network traffic to demonstrate an understanding of potential security breaches.

241ST PLACE
OUT OF 3593
NATIONAL RANK

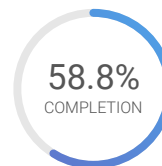
94th National
Percentile

170 POINTS
OUT OF 365
PERFORMANCE SCORE

Average: 151.3 Points



Average: 45.4%



Average: 48.8%

TOP NICE WORKROLES

Cyber Defense Analyst
All-Source Analyst
Cyber Defense Incident
Responder
Target Network Analyst
Cyber Operator

Attack (Easy)

Analyze a network packet capture to identify an ARP spoofing attack

100 POINTS
OUT OF 100

71.4%
ACCURACY

COMPLETION: **100.0%**

Chunked (Easy)

Analyze a wireless network packet capture to extract information from the broadcast packets

25 POINTS
OUT OF 65

50.0%
ACCURACY

COMPLETION: **66.7%**

Lighting (Medium)

Analyze a network packet capture to identify the IOT protocol and decode its communications

45 POINTS
OUT OF 100

37.5%
ACCURACY

COMPLETION: **50.0%**

Covert Exfiltration (Hard)

Reassemble a multi-part HTTP file download from a network packet capture

0 POINTS
OUT OF 100

0.0%
ACCURACY

COMPLETION: **0.0%**





Open Source Intelligence Module

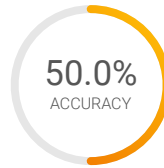
Utilize publicly available information such as search engines, public repositories, social media, and more to gain in-depth knowledge on a topic or target.

193 RD PLACE
OUT OF 3593
NATIONAL RANK

350 POINTS
OUT OF 350
PERFORMANCE SCORE

95th National
Percentile

Average: 224.6 Points



Average: 67.1%



Average: 79.9%

TOP NICE WORKROLES

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

Rules of Conduct (Easy)

25 POINTS
OUT OF 25

100.0%
ACCURACY

COMPLETION: **100.0%**

Introductory challenge on acceptable conduct during NCL

Network Info (Easy)

50 POINTS
OUT OF 50

66.7%
ACCURACY

COMPLETION: **100.0%**

Extract WiFi network information out of a QR code

Message in Stone (Medium)

75 POINTS
OUT OF 75

100.0%
ACCURACY

COMPLETION: **100.0%**

Identify the ancient esoteric alphabet used to hide a secret message

Restaurant WiFi (Medium)

100 POINTS
OUT OF 100

18.2%
ACCURACY

COMPLETION: **100.0%**

Identify the guest WiFi password using openly available information

Vantage Point (Hard)

100 POINTS
OUT OF 100

40.0%
ACCURACY

COMPLETION: **100.0%**

Geolocate a photo without GPS metadata



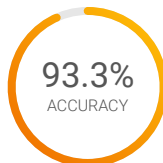


Password Cracking Module

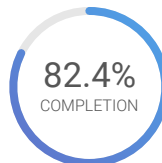
Try your hand at cracking these passwords.

122 ND PLACE
OUT OF 3593
NATIONAL RANK

210 POINTS
OUT OF 330
PERFORMANCE SCORE



Average: 85.8%



Average: 47.0%

TOP NICE WORKROLES

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

97th National
Percentile

Average: 111.1 Points

Cracking 1 (Easy)

Crack MD5 password hashes

30 POINTS
OUT OF 30

100.0%
ACCURACY

COMPLETION: **100.0%**

Cracking 2 (Easy)

Crack Windows NTLM password hashes using rainbow tables

30 POINTS
OUT OF 30

75.0%
ACCURACY

COMPLETION: **100.0%**

Cracking 3 (Medium)

Build a wordlist or pattern config to crack password hashes of a known pattern

45 POINTS
OUT OF 45

100.0%
ACCURACY

COMPLETION: **100.0%**

Cracking 4 (Hard)

Crack salted MD5 password hashes

75 POINTS
OUT OF 75

100.0%
ACCURACY

COMPLETION: **100.0%**

Cracking 5 (Hard)

Build a wordlist to crack salted passwords not found in common wordlists

30 POINTS
OUT OF 150

100.0%
ACCURACY

COMPLETION: **40.0%**





Scanning & Reconnaissance Module

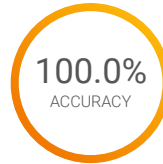
Identify and use the proper tools to gain intelligence about a target including its services and potential vulnerabilities.

114 TH PLACE
OUT OF 3593
NATIONAL RANK

97th National
Percentile

230 POINTS
OUT OF 300
PERFORMANCE SCORE

Average: 129.1 Points



Average: 90.5%



Average: 46.7%

TOP NICE WORKROLES

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

Docker (Easy)

60 POINTS
OUT OF 100

100.0%
ACCURACY

COMPLETION: **60.0%**

Extract metadata information from a Docker container image

Call to Action (Medium)

100 POINTS
OUT OF 100

100.0%
ACCURACY

COMPLETION: **100.0%**

Scan and extract information data from a Redis database

Database (Hard)

70 POINTS
OUT OF 100

100.0%
ACCURACY

COMPLETION: **66.7%**

Scan and extract information data from a MongoDB database

Web Application Exploitation Module

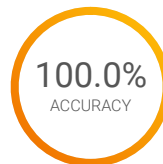
Identify actionable exploits and vulnerabilities and use them to bypass the security measures in online services.

26 TH PLACE
OUT OF 3593
NATIONAL RANK

100th National
Percentile

130 POINTS
OUT OF 300
PERFORMANCE SCORE

Average: 47.9 Points



Average: 58.1%



Average: 24.2%

TOP NICE WORKROLES

Cyber Operator
Software Developer
Exploitation Analyst
Systems Security Analyst
Database Administrator

Never Winter Bank (Easy)

100 POINTS
OUT OF 100

100.0%
ACCURACY

COMPLETION: **100.0%**

Exploit a bug in the parseInt function of older JavaScript web runtimes

WebAuthn (Medium)

0 POINTS
OUT OF 100

0.0%
ACCURACY

COMPLETION: **0.0%**

Exploit an improperly configured WebAuthn login scheme

File Server v2 (Hard)

30 POINTS
OUT OF 100

100.0%
ACCURACY

COMPLETION: **50.0%**

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

