



NCL Spring 2023 Team Game Scouting Report

Dear Mitchell Arndt (Team "Reggie The Root Bird @ Illinois State"),

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/GHJJXC9G5PHL

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!

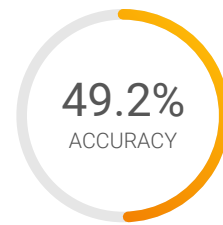
Dr. David Zeichick
NCL Commissioner



NATIONAL CYBER LEAGUE SCORE CARD

NCL 2023 SPRING TEAM GAME

YOUR TOP CATEGORIES



Average: 61.7%

cyberskyline.com/report/GHJJXC9G5PHL

NATIONAL RANK
50TH PLACE
OUT OF 3593
PERCENTILE
99TH

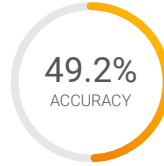


NCL Spring 2023 Team Game

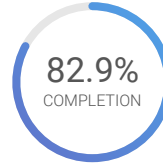
The NCL Team Game is designed for student players nationwide to compete in realtime in the categories listed below. The Team Game promotes camaraderie and evaluates the collective technical cybersecurity skills of the team members.

50TH PLACE
OUT OF 3593
NATIONAL RANK

2155 POINTS
OUT OF 3000
PERFORMANCE SCORE



Average: 61.7%



Average: 35.9%

99th National
Percentile

Average: 834.7 Points

Cryptography

285 POINTS
OUT OF 355

33.3%
ACCURACY

COMPLETION: **83.3%**

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

Enumeration & Exploitation

110 POINTS
OUT OF 300

44.4%
ACCURACY

COMPLETION: **66.7%**

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

Forensics

165 POINTS
OUT OF 300

75.0%
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

300 POINTS
OUT OF 300

57.1%
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

265 POINTS
OUT OF 365

28.6%
ACCURACY

COMPLETION: **82.4%**

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

Open Source Intelligence

350 POINTS
OUT OF 350

59.1%
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

73.7%
ACCURACY

COMPLETION: **82.4%**

Try your hand at cracking these passwords.

Scanning & Reconnaissance

260 POINTS
OUT OF 300

100.0%
ACCURACY

COMPLETION: **80.0%**

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

Web Application Exploitation

110 POINTS
OUT OF 300

33.3%
ACCURACY

COMPLETION: **33.3%**

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

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



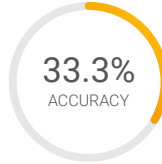


Cryptography Module

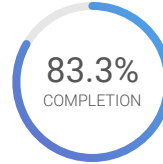
Identify techniques used to encrypt or obfuscate messages and leverage tools to extract the plaintext.

57 TH PLACE
OUT OF 3593
NATIONAL RANK

285 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

99th National
Percentile

Average: 114.5 Points

Decoding 1 (Easy)

30 POINTS
OUT OF 30

30.0%
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

20.0%
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)

80 POINTS
OUT OF 100

10.0%
ACCURACY

COMPLETION: **50.0%**

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



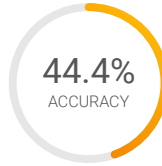


Enumeration & Exploitation Module

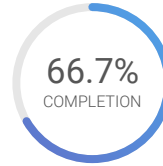
Identify actionable exploits and vulnerabilities and use them to bypass the security measures in code and compiled binaries.

192 ND PLACE
OUT OF 3593
NATIONAL RANK

110 POINTS
OUT OF 300
PERFORMANCE SCORE



Average: 56.9%



Average: 46.4%

TOP NICE WORKROLES

Cyber Operator
Target Developer
Exploitation Analyst
Software Developer
Systems Security Analyst

95th National
Percentile

Average: 75.7 Points

Shinny Stone (Easy)

100 POINTS
OUT OF 100

50.0%
ACCURACY

COMPLETION: **100.0%**

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

Vault (Medium)

10 POINTS
OUT OF 100

50.0%
ACCURACY

COMPLETION: **50.0%**

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

Crypto Coincidence (Hard)

0 POINTS
OUT OF 100

0.0%
ACCURACY

COMPLETION: **0.0%**

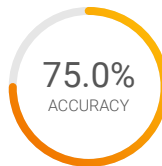
Analyze a compiled C binary and bypass its custom encryption and packing

Forensics Module

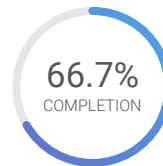
Utilize the proper tools and techniques to analyze, process, recover, and/or investigate digital evidence in a computer-related incident.

89 TH PLACE
OUT OF 3593
NATIONAL RANK

165 POINTS
OUT OF 300
PERFORMANCE SCORE



Average: 59.1%



Average: 34.2%

TOP NICE WORKROLES

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

98th National
Percentile

Average: 96.9 Points

Stacked (Easy)

100 POINTS
OUT OF 100

100.0%
ACCURACY

COMPLETION: **100.0%**

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

Hidden (Medium)

35 POINTS
OUT OF 100

66.7%
ACCURACY

COMPLETION: **50.0%**

Extract hidden information from a macOS .DS_STORE file

Memory (Hard)

30 POINTS
OUT OF 100

66.7%
ACCURACY

COMPLETION: **66.7%**

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



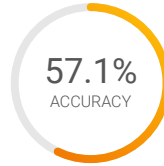


Log Analysis Module

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

61 ST PLACE
OUT OF 3593
NATIONAL RANK

300 POINTS
OUT OF 300
PERFORMANCE SCORE



Average: 57.5%



Average: 51.2%

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

99th National
Percentile

Average: 138.2 Points

PGP (Easy)

100 POINTS
OUT OF 100

71.4%
ACCURACY

COMPLETION: **100.0%**

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

Iptables (Medium)

100 POINTS
OUT OF 100

77.8%
ACCURACY

COMPLETION: **100.0%**

Analyze a iptables log file to identify network traffic patterns

Flight Record (Hard)

100 POINTS
OUT OF 100

42.1%
ACCURACY

COMPLETION: **100.0%**

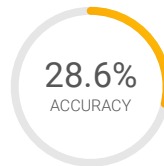
Parse a binary encoded drone flight record file and extract its fields

Network Traffic Analysis Module

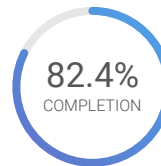
Identify malicious and benign network traffic to demonstrate an understanding of potential security breaches.

47 TH PLACE
OUT OF 3593
NATIONAL RANK

265 POINTS
OUT OF 365
PERFORMANCE SCORE



Average: 45.4%



Average: 48.8%

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

99th National
Percentile

Average: 151.3 Points

Attack (Easy)

100 POINTS
OUT OF 100

71.4%
ACCURACY

COMPLETION: **100.0%**

Analyze a network packet capture to identify an ARP spoofing attack

Chunked (Easy)

65 POINTS
OUT OF 65

75.0%
ACCURACY

COMPLETION: **100.0%**

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

Lighting (Medium)

80 POINTS
OUT OF 100

16.1%
ACCURACY

COMPLETION: **83.3%**

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

Covert Exfiltration (Hard)

20 POINTS
OUT OF 100

14.3%
ACCURACY

COMPLETION: **33.3%**

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



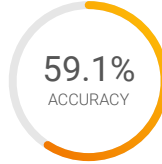


Open Source Intelligence Module

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

161 ST PLACE
OUT OF 3593
NATIONAL RANK

350 POINTS
OUT OF 350
PERFORMANCE SCORE



Average: 67.1%



Average: 79.9%

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

96th National
Percentile

Average: 224.6 Points

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

100.0%
ACCURACY

COMPLETION: **100.0%**

Extract WiFi network information out of a QR code

Message in Stone (Medium)

75 POINTS
OUT OF 75

40.0%
ACCURACY

COMPLETION: **100.0%**

Identify the ancient esoteric alphabet used to hide a secret message

Restaurant WiFi (Medium)

100 POINTS
OUT OF 100

28.6%
ACCURACY

COMPLETION: **100.0%**

Identify the guest WiFi password using openly available information

Vantage Point (Hard)

100 POINTS
OUT OF 100

66.7%
ACCURACY

COMPLETION: **100.0%**

Geolocate a photo without GPS metadata



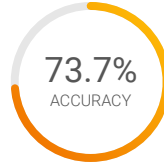


Password Cracking Module

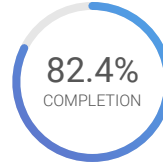
Try your hand at cracking these passwords.

162 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

96th 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

100.0%
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

28.6%
ACCURACY

COMPLETION: **40.0%**



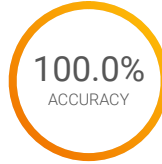


Scanning & Reconnaissance Module

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

91ST PLACE
OUT OF 3593
NATIONAL RANK

260 POINTS
OUT OF 300
PERFORMANCE SCORE



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

98th National Percentile

Average: 129.1 Points

Average: 90.5%

Average: 46.7%

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)

100 POINTS
OUT OF 100

100.0%
ACCURACY

COMPLETION: 100.0%

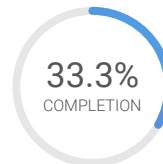
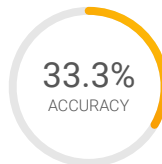
Scan and extract information data from a MongoDB database

Web Application Exploitation Module

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

82ND PLACE
OUT OF 3593
NATIONAL RANK

110 POINTS
OUT OF 300
PERFORMANCE SCORE



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

98th National Percentile

Average: 47.9 Points

Average: 58.1%

Average: 24.2%

Never Winter Bank (Easy)

90 POINTS
OUT OF 100

25.0%
ACCURACY

COMPLETION: 50.0%

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

WebAuthn (Medium)

20 POINTS
OUT OF 100

50.0%
ACCURACY

COMPLETION: 50.0%

Exploit an improperly configured WebAuthn login scheme

File Server v2 (Hard)

0 POINTS
OUT OF 100

0.0%
ACCURACY

COMPLETION: 0.0%

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

