Akhil Reddy Duvvuru
akhilganesh29@gmail.com

NCL Fall 2023 Team Game Scouting Report

Dear Akhil Reddy Duvvuru (Team "GW SUSpects [WiCyS GW 1]"),

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. You were in the Experienced Students Bracket, consisting of students enrolled in advanced degrees or hold extensive industry working experience.

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/QEM0A0NM3FUQ

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

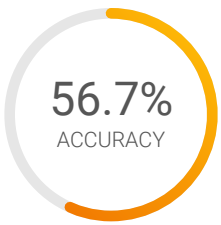
NCL 2023 FALL TEAM GAME

EXPERIENCED STUDENTS RANK
117TH PLACE OUT OF 454

PERCENTILE
75TH

YOUR TOP CATEGORIES

SCANNING & RECONNAISSANCE	NETWORK TRAFFIC ANALYSIS	CRYPTOGRAPHY
84TH PERCENTILE	83RD PERCENTILE	75TH PERCENTILE



Average: 63.3%

cyberskyline.com/report
ID: QEM0A0NM3FUQ

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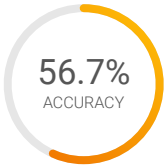
NCL Fall 2023 Team Game

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.

117 TH PLACE OUT OF 454
EXPERIENCED STUDENTS RANK

870 POINTS OUT OF 3000
PERFORMANCE SCORE



75th Experienced Students Percentile

Average: 1193.5 Points

Average: 63.3%

Average: 49.3%

Cryptography

110 POINTS OUT OF 335

100.0% ACCURACY

COMPLETION: **54.5%**

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

Enumeration & Exploitation

15 POINTS OUT OF 300

25.0% ACCURACY

COMPLETION: **16.7%**

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

Forensics

10 POINTS OUT OF 300

33.3% ACCURACY

COMPLETION: **8.3%**

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

Log Analysis

100 POINTS OUT OF 300

35.7% ACCURACY

COMPLETION: **55.6%**

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

59.3% ACCURACY

COMPLETION: **80.0%**

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

Open Source Intelligence

170 POINTS OUT OF 345

69.2% ACCURACY

COMPLETION: **81.8%**

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

20 POINTS OUT OF 360

100.0% ACCURACY

COMPLETION: **11.8%**

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

Scanning & Reconnaissance

125 POINTS OUT OF 300

57.9% 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

0 POINTS OUT OF 300

0.0% ACCURACY

COMPLETION: **0.0%**

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

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

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Cryptography Module

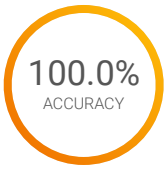
Identify techniques used to encrypt or obfuscate messages and leverage tools to extract the plaintext.

117 TH PLACE OUT OF 454
EXPERIENCED STUDENTS RANK

110 POINTS OUT OF 335
PERFORMANCE SCORE

75th Experienced Students Percentile

Average: 162.4 Points



Average: 71.9%

Average: 66.8%

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

100.0% 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)

0 POINTS OUT OF 100

0.0% ACCURACY

COMPLETION: 0.0%

Decipher the plaintext for a message encrypted with a Sudoku cipher

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Enumeration & Exploitation Module

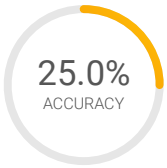
Identify actionable exploits and vulnerabilities and use them to bypass the security measures in code and compiled binaries.

146 TH PLACE OUT OF 454
EXPERIENCED STUDENTS RANK

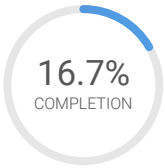
68th Experienced Students Percentile

15 POINTS OUT OF 300
PERFORMANCE SCORE

Average: 97.0 Points



Average: 75.2%



Average: 49.5%

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

Espionage (Easy)

15 POINTS OUT OF 100

100.0% ACCURACY

COMPLETION: 50.0%

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

Bytecode (Medium)

0 POINTS OUT OF 100

0.0% ACCURACY

COMPLETION: 0.0%

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

Journal (Hard)

0 POINTS OUT OF 100

0.0% ACCURACY

COMPLETION: 0.0%

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

Forensics Module

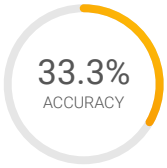
Utilize the proper tools and techniques to analyze, process, recover, and/or investigate digital evidence in a computer-related incident.

122 ND PLACE OUT OF 454
EXPERIENCED STUDENTS RANK

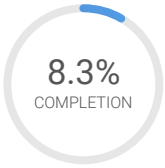
74th Experienced Students Percentile

10 POINTS OUT OF 300
PERFORMANCE SCORE

Average: 132.8 Points



Average: 66.0%



Average: 50.6%

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

Seek (Easy)

10 POINTS OUT OF 100

50.0% ACCURACY

COMPLETION: 33.3%

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

Art (Medium)

0 POINTS OUT OF 100

0.0% ACCURACY

COMPLETION: 0.0%

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

The Book (Hard)

0 POINTS OUT OF 100

0.0% ACCURACY

COMPLETION: 0.0%

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

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Log Analysis Module

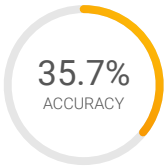
Utilize the proper tools and techniques to establish a baseline for normal operation and identify malicious activities using log files from various services.

132 ND PLACE OUT OF 454
EXPERIENCED STUDENTS RANK

71 st Experienced Students Percentile

100 POINTS OUT OF 300
PERFORMANCE SCORE

Average: 177.7 Points



Average: 57.4%

Average: 71.0%

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

Wardriving (Easy)	60 POINTS OUT OF 100	33.3% ACCURACY	COMPLETION: 66.7%
Parse a wardriving log to identify WiFi and Bluetooth network beacons			
Mobile (Medium)	10 POINTS OUT OF 100	33.3% ACCURACY	COMPLETION: 20.0%
Dissect an Android log to identify historic user activity on the device			
Za (Hard)	30 POINTS OUT OF 100	42.9% ACCURACY	COMPLETION: 75.0%
Analyze a Windows Sysmon log to identify the file that was covertly exfiltrated via DNS query packets			

Network Traffic Analysis Module

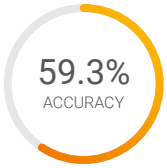
Identify malicious and benign network traffic to demonstrate an understanding of potential security breaches.

80 TH PLACE OUT OF 454
EXPERIENCED STUDENTS RANK

83 rd Experienced Students Percentile

220 POINTS OUT OF 360
PERFORMANCE SCORE

Average: 211.4 Points



Average: 53.6%

Average: 70.2%

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

Next Gen (Easy)	70 POINTS OUT OF 90	50.0% ACCURACY	COMPLETION: 80.0%
Analyze and identify the layout of an IPv6 network			
The Webz (Medium)	80 POINTS OUT OF 100	71.4% ACCURACY	COMPLETION: 83.3%
Analyze Border Gateway Protocol (BGP) traffic to identify automatic route discovery mechanisms			
Router (Medium)	50 POINTS OUT OF 70	71.4% ACCURACY	COMPLETION: 83.3%
Decrypt a WiFi packet capture and extract the contents of the network traffic			
Looking Glass (Hard)	20 POINTS OUT OF 100	40.0% ACCURACY	COMPLETION: 66.7%
Analyze and extract raw H.264 video from a wireless Android screen recording			

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Open Source Intelligence Module

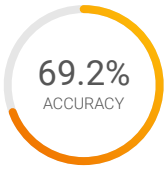
Utilize publicly available information such as search engines, public repositories, social media, and more to gain in-depth knowledge on a topic or target.

126 TH PLACE OUT OF 454
EXPERIENCED STUDENTS RANK

170 POINTS OUT OF 345
PERFORMANCE SCORE

73rd Experienced Students Percentile

Average: 236.5 Points



Average: 64.0%

Average: 84.8%

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)	50 POINTS OUT OF 60	60.0% ACCURACY	COMPLETION: 85.7%
Identify characteristics of the 2020 Twitter hack from government reports			
Reputation (Medium)	40 POINTS OUT OF 40	33.3% 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			

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Password Cracking Module

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

132 ND PLACE OUT OF 454
EXPERIENCED STUDENTS RANK

20 POINTS OUT OF 360
PERFORMANCE SCORE

100.0%
ACCURACY

11.8%
COMPLETION

71st Experienced Students Percentile

Average: 85.9 Points

Average: 89.9%

Average: 28.9%

Hashing (Easy)

20 POINTS OUT OF 20

100.0% ACCURACY

COMPLETION: 100.0%

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

International (Easy)

0 POINTS OUT OF 30

0.0% ACCURACY

COMPLETION: 0.0%

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

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Scanning & Reconnaissance Module

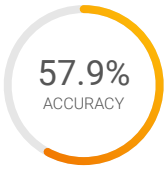
Identify and use the proper tools to gain intelligence about a target including its services and potential vulnerabilities.

74 TH PLACE OUT OF **454**
EXPERIENCED STUDENTS RANK

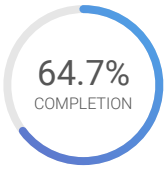
84th Experienced Students Percentile

125 POINTS OUT OF 300
PERFORMANCE SCORE

Average: 125.1 Points



Average: 62.7%



Average: 50.1%

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

Knock (Easy)

40 POINTS OUT OF 100
80.0% ACCURACY
COMPLETION: **66.7%**

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

SSH Server (Medium)

10 POINTS OUT OF 100
50.0% ACCURACY
COMPLETION: **33.3%**

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

Academic Papers (Hard)

75 POINTS OUT OF 100
50.0% ACCURACY
COMPLETION: **75.0%**

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

Web Application Exploitation Module

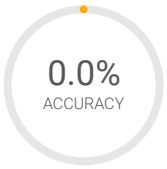
Identify actionable exploits and vulnerabilities and use them to bypass the security measures in online services.

131 ST PLACE OUT OF **454**
EXPERIENCED STUDENTS RANK

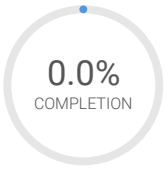
72nd Experienced Students Percentile

0 POINTS OUT OF 300
PERFORMANCE SCORE

Average: 79.4 Points



Average: 68.1%



Average: 42.6%

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

Secure Banking (Easy)

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

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

LowLine (Medium)

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

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

Toms Fan Club v2 (Hard)

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

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