



*The National Cyber League - Where Cybersecurity is a Passion*

## NCL 2018 Fall Regular Season Scouting Report

Dear Bohan Zhang,

Congratulations on a great NCL 2018 Fall Regular Season!

### National Cyber League (NCL)

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. Using challenges designed around industry-recognized performance-based exam objectives and aligned with individual and team games, the NCL is a first-of-its-kind ongoing experiment in learning and gaming using next-generation high-fidelity simulation environments. Learn more about the NCL at [www.nationalcyberleague.org](http://www.nationalcyberleague.org). If you have any questions regarding the information in this report please inquire at [info@nationalcyberleague.org](mailto:info@nationalcyberleague.org).

### NCL 2018 Fall Season

The NCL 2018 Fall Season was designed to develop and validate player knowledge and skills in preparation for further learning, career readiness, industry certifications, and other cybersecurity competitions. Hosted challenges in the NCL Gymnasiums were made available to all players and coaches and aligned to the games. The games were designed around performance-based exam objectives of the CompTIA Security+™ and EC-Council Certified Ethical Hacker (CEH) certifications.

The NCL 2018 Fall Season began with the Preseason round to group players into one of three competition brackets based on skill level: Gold (top 15% of all players nationally - 472 players), Silver (the next 35% of all players nationally - 1,175 players) or Bronze (the next 50% of all players nationally - 1,680 players). Players who did not participate in the Preseason were not bracketed or ranked. This made the Regular Season more engaging by grouping players with similar knowledge and skill levels.

At the beginning of the NCL 2018 Fall Season, 4,730 students/players (up from 3,449 in Spring 2018) and 336 faculty/coaches from more than 350 two- and four-year schools across 49 U.S. states registered to play.

The NCL 2018 Fall Season was powered by Cyber Skyline's cloud-based skills evaluation platform. Cyber Skyline hosted the scenario-driven cybersecurity challenges for all players to compete and track their progress in real-time.

To validate the contents of this report, please access:  
[cyberskyline.com/report/A7WWCBY0J9XU](http://cyberskyline.com/report/A7WWCBY0J9XU)





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The Regular Season Capture the Flag (CTF) game, optimized for individuals, took place from November 2 through November 4. The Postseason CTF game, optimized for organized team play, took place from November 16 through November 18. The games were conducted in real-time for students across the country.

## NCL Scouting Report

What follows is a customized NCL Scouting Report of your performance in the NCL 2018 Fall Regular Season. We hope you find it to be valuable in both confirming the skills you demonstrated competencies in, as well as identifying areas for improvement. In addition, the NCL Scouting Report can be used as part of any job application, as it provides an external validation of skills as demonstrated in competitive game play based on industry-recognized certification performance-based exam objectives.

The following definitions apply to your performance across a range of games, optimized for individuals:

- **Bracket Rank:** overall place within the Bracket
- **National Rank:** overall place with respect to all players, across all Brackets
- **Score:** total combined flag points; the higher the score, the higher the ranking
- **Flag Captures:** the combined number of successful flag captures/submissions
- **Flag Attempts:** the combined number of flags submitted to the Cyber Skyline Platform
- **Accuracy:** percentage of flag submissions that were correct. Formula: Total Flag Captures divided by Total Flag Attempts

## NCL Fall 2018 Preseason

82 flags (1,510 points)

The top player for NCL Fall 2018 Preseason captured 82 flags out of 82 total flags, scoring 1,510 points out of 1,510 total points, and had an accuracy of 100.00%.

On average, players captured 46 flags, 586 points, and had an accuracy of 65.61%.

National Rank	Score	Flag Captures	Flag Attempts	Accuracy
317	1,230	77	112	68.75%

Based on the Preseason performance, **Bohan Zhang** was placed into the **Gold Bracket** for the Regular Season game.

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## NCL Fall 2018 Regular Season

143 flags (3,000 points)

The top player for NCL Fall 2018 Regular Season captured 143 flags out of 143 total flags, scoring 3,000 points out of 3,000 total points, and had an accuracy of 80.34%.

On average, players captured 61 flags, 894 points, and had an accuracy of 68.92%.

National Rank	Gold Bracket Rank	Score	Flag Captures	Flag Attempts	Accuracy
317	227	1,755	109	146	74.66%

## Individual Competencies

The following tables show the player's rank Nationally and by Bracket, based on the following modules:

### 1. Cryptography

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

### 2. Enumeration and Exploitation

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

### 3. Log Analysis

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

### 4. Network Traffic Analysis

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

### 5. Open Source Intelligence

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

### 6. Password Cracking

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

### 7. Scanning

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

### 8. Web Application Exploitation

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

### 9. Wireless Access Exploitation

Identify the security posture of wireless networks from network captures.

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## Cryptography

18 flags (400 points)

The top player in this module captured 18 flags and scored 400 points with an accuracy of 100.00%.

On average, players in this module captured 10 flags and scored 206 points with an accuracy of 83.83%.

Gold Bracket players on average captured 15 flag and scored 320 points with an accuracy of 91.99%.

National Rank	Gold Bracket Rank	Score	Flag Captures	Flag Attempts	Accuracy
588	283	300	15	21	71.43%

## Enumeration and Exploitation

7 flags (300 points)

The top player in this module captured 7 flags and scored 300 points with an accuracy of 100.00%.

On average, players in this module captured 4 flags and scored 76 points with an accuracy of 70.65%.

Gold Bracket players on average captured 5 flag and scored 132 points with an accuracy of 88.23%.

National Rank	Gold Bracket Rank	Score	Flag Captures	Flag Attempts	Accuracy
543	276	60	4	4	100.00%

## Log Analysis

17 flags (400 points)

The top player in this module captured 17 flags and scored 400 points with an accuracy of 100.00%.

On average, players in this module captured 8 flags and scored 130 points with an accuracy of 63.40%.

Gold Bracket players on average captured 11 flag and scored 207 points with an accuracy of 62.58%.

National Rank	Gold Bracket Rank	Score	Flag Captures	Flag Attempts	Accuracy
330	214	175	10	14	71.43%

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## Network Traffic Analysis

19 flags (500 points)

The top player in this module captured 19 flags and scored 500 points with an accuracy of 100.00%.  
On average, players in this module captured 9 flags and scored 202 points with an accuracy of 56.85%.  
Gold Bracket players on average captured 14 flag and scored 315 points with an accuracy of 69.22%.

National Rank	Gold Bracket Rank	Score	Flag Captures	Flag Attempts	Accuracy
155	121	360	16	23	69.57%

## Open Source Intelligence

23 flags (200 points)

The top player in this module captured 23 flags and scored 200 points with an accuracy of 100.00%.  
On average, players in this module captured 18 flags and scored 129 points with an accuracy of 74.10%.  
Gold Bracket players on average captured 21 flag and scored 166 points with an accuracy of 82.50%.

National Rank	Gold Bracket Rank	Score	Flag Captures	Flag Attempts	Accuracy
974	349	135	20	24	83.33%

## Password Cracking

19 flags (300 points)

The top player in this module captured 19 flags and scored 300 points with an accuracy of 100.00%.  
On average, players in this module captured 8 flags and scored 85 points with an accuracy of 90.36%.  
Gold Bracket players on average captured 13 flag and scored 160 points with an accuracy of 93.66%.

National Rank	Gold Bracket Rank	Score	Flag Captures	Flag Attempts	Accuracy
259	171	185	14	14	100.00%

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## Scanning

17 flags (250 points)

The top player in this module captured 17 flags and scored 250 points with an accuracy of 100.00%.  
On average, players in this module captured 9 flags and scored 116 points with an accuracy of 55.77%.  
Gold Bracket players on average captured 13 flag and scored 180 points with an accuracy of 68.10%.

National Rank	Gold Bracket Rank	Score	Flag Captures	Flag Attempts	Accuracy
551	278	150	12	22	54.55%

## Web Application Exploitation

9 flags (300 points)

The top player in this module captured 9 flags and scored 300 points with an accuracy of 100.00%.  
On average, players in this module captured 4 flags and scored 54 points with an accuracy of 59.78%.  
Gold Bracket players on average captured 6 flag and scored 94 points with an accuracy of 84.07%.

National Rank	Gold Bracket Rank	Score	Flag Captures	Flag Attempts	Accuracy
643	302	40	4	4	100.00%

## Wireless Access Exploitation

13 flags (250 points)

The top player in this module captured 13 flags and scored 250 points with an accuracy of 100.00%.  
On average, players in this module captured 8 flags and scored 121 points with an accuracy of 63.50%.  
Gold Bracket players on average captured 11 flag and scored 195 points with an accuracy of 78.69%.

National Rank	Gold Bracket Rank	Score	Flag Captures	Flag Attempts	Accuracy
235	171	250	13	19	68.42%

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Thank you for your participation in the NCL 2018 Fall Regular Season! We hope you will continue to develop your knowledge and skills and make meaningful contributions as part of the Information Security workforce!

Dr. Dan Manson  
NCL Commissioner

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