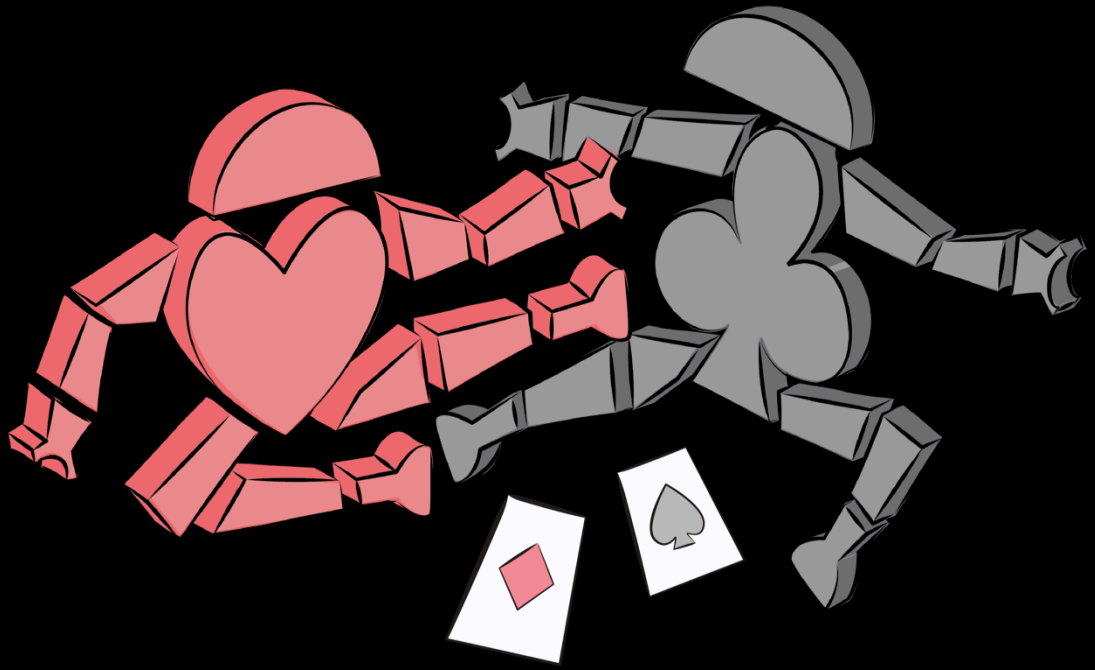

MITPOKERBOTS2015

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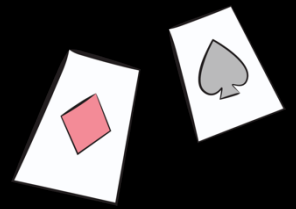
POKERBOTS 2015 FINAL EVENT

Competition Results

Final Three Bot Analysis

Human vs. Bot

Raffles



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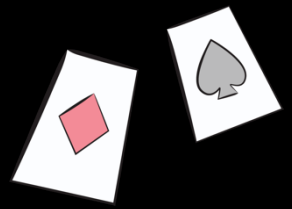
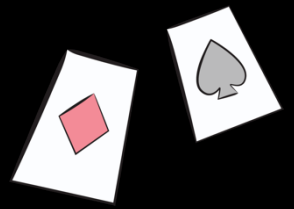


The Challenge

Three-handed Pot-Limit
Texas Hold ‘em
Sit ‘n Go
Triplicate Poker



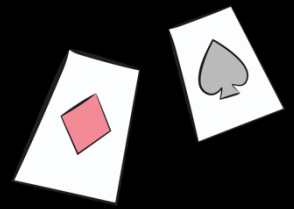
GAME OVERVIEW

- Pot-Limit Texas Hold ‘em
  - Maximum bet size is equal to the size of the pot
  - Otherwise identical to No-Limit Texas Hold ‘em
- Three-handed Sit ‘n Go
  - Matches are played in groups of three
  - Players start with a set number of chips
  - Players who lose their entire stack get eliminated
  - Players are paid out at the end of the match

Sit ‘n Go Structure

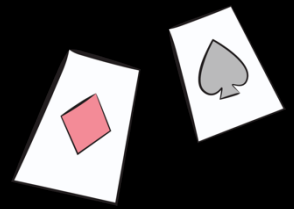
1st place: +100 points
2nd place: -20 points
3rd place: -80 points

Triplicate: For every match, five additional matches are played in parallel with the exact same dealt cards, but with different player seating



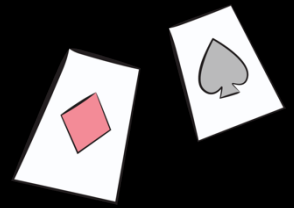
Sit ‘n Go Structure (cont.)

- For each match, the three players play continuous SnG’s until a cumulative hand limit has been reached
- A secondary bankroll keeps track of every player’s payout at the end of every SnG
- This bankroll is used to determine every player’s payout at the end of the match



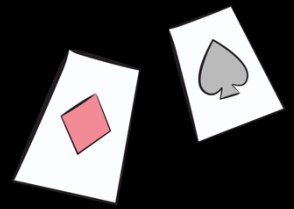
Poker Tracking Statistics

- VPIP stands for Voluntarily Put $ In Pot. This stat shows the percentage of time you make calls or raises before the flop
- PFR stands for Pre Flop Raise. This stat shows the percentage of time you raise before the flop.
- AF stands for Aggression Factor. This stat displays the ratio of the times you raise or bet against you calling



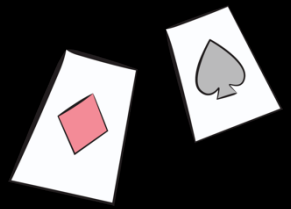
VPIP Hand Ranges

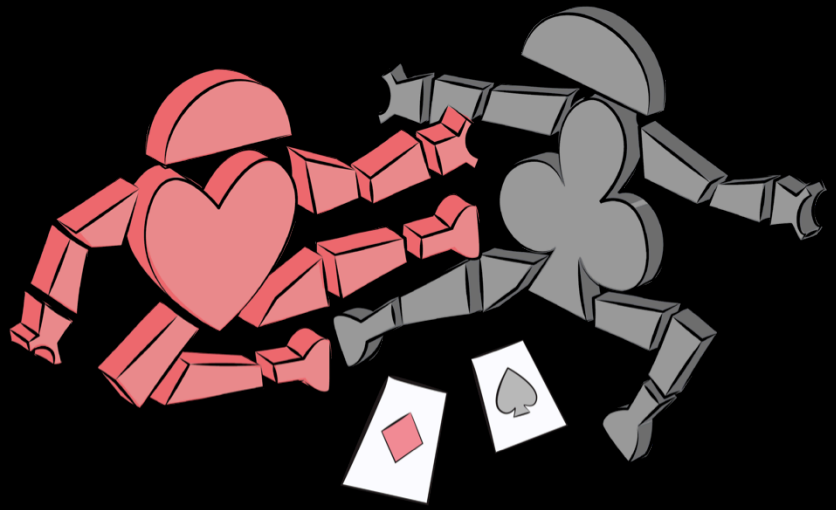
- **10%** = "pairs 66+, AK, AQ, suited aces, KQs, QJs"
- **20%** = "any pair, any two broadway, any suited ace"
- **30%** = "any pair, any ace, any suited king, any suited broadway, any suited connectors 54s+, KTo+, QJo“
- **40%** = "any pair, any ace, any king, any two broadway, any suited connectors 32s+“



VPIP/PFR Chart

High VPIP High PFR 70/65 LAG player	High VPIP Low PFR 60/10 Calling station
Low VPIP High PFR 25/22 Rock	Mid VPIP High PFR 50/40 TAG Player

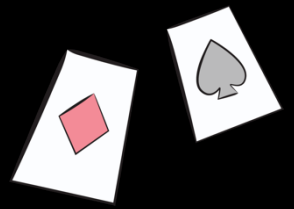




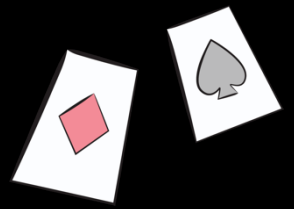
COMPETITION RESULTS

GAME DETAILS

Casino
Mini Tournament
Final Tournament

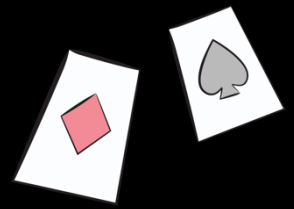


Casino



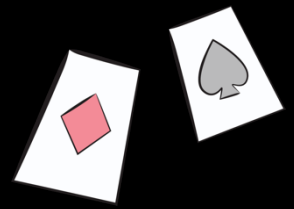
THE CASINO

- Cumulative bankroll
- Daily results
- Opportunity to test different strategies
- 1,000 hands per match



Final Casino Standings

Rank	Team	Bankroll
1	POTRIPPER	$174,640
2	CJK	$164,010
3	Kerbopots	$148,500
4	Titan	$115,100
5	Cameleon	$113,020
6	Pokermon	$74,800
7	q	$60,740
8	TheHouse	$50,000

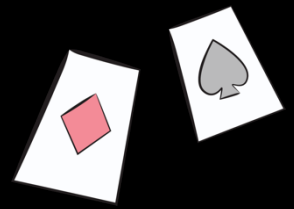


Casino Runner-up - $500

Congratulations to CJK!

Team Members: Courtney Guo, Joseph Lin, Kevin Liu

- Profitable on all 14 days of the casino
- Makes an average of $11,715 per day

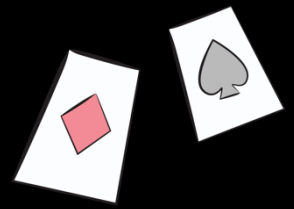


Casino Champion - $1,000

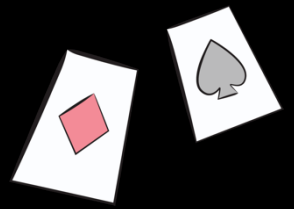
Congratulations to POTRIPPER!

Team Members: Danny Yuan

- Started the casino on Day 3
- Very strong in the early casino rounds
- Makes an average of $14,553 per day

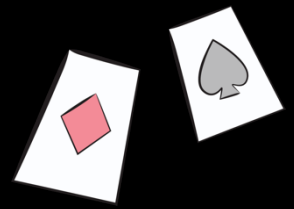


Mini Tournament



Mini Tournament

- Identical to the final tournament
- Held halfway through IAP
- A practice run for the final tournament
- 46 teams



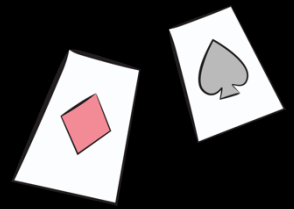
Mini Tournament Structure

Cumulative bankroll:

- 46 to 9 teams: 1,000 hands

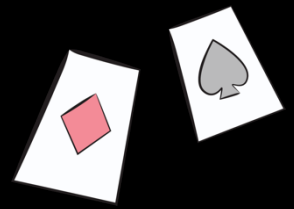
Instant bankroll runoff:

- 9 to 3 teams: 10,000 hands
- Final 3 teams: 25,000 hands



Mini Tournament Standings

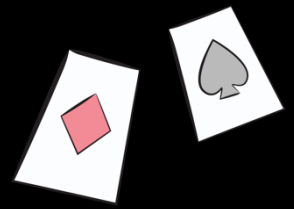
Rank	Team	Bankroll
1	CJK	$9,600
2	Pokermon	$8,790
3	q	$3,120
4	kerbopots	$1,410
5	Titan	-$1,080
6	TheHouse	-$2,760
7	TheCincinnatiKid	-$3,600
8	TheJoker	-$5,940
9	Nuts	-$9,540



Mini Tournament Standings

Rank	Team	Bankroll
1	CJK	$420
2	Pokermon	-$60
3	q	-$360

Team	VPIP(%)	PFR(%)	AF
CJK	56	52	46
Pokermon	54	30	0.65
q	28	18	3.8

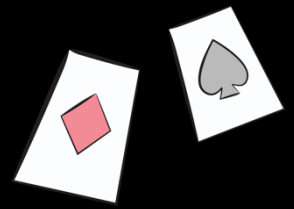


Mini Tournament Runner-up: $250

Congratulations to Pokermon!

Team Members: Max Kleiman-Weiner, Daniel Roberts

- Solid playing style (54/30)
- Most profitable bot in the first round

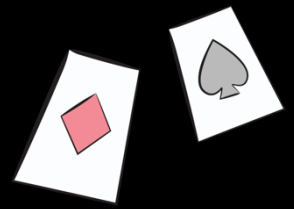


Mini Tournament Champion: $500

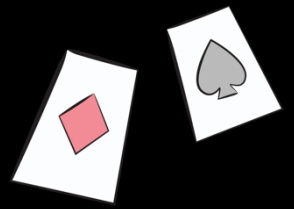
Congratulations to CJK!

Team Members: Courtney Guo, Joseph Lin, Kevin Liu

- Very aggressive playing style (56/52)
- Raises max on all strong hands



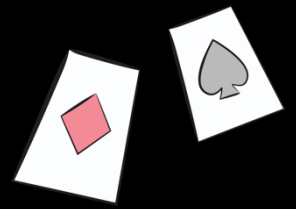
Final Tournament (Newbie)



Newbie Tournament Structure

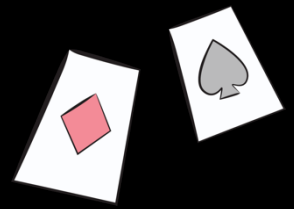
Instant bankroll runoff:

- 13 to 8 teams: 1,000 hands
- 8 to 4 teams: 5,000 hands
- Final 4 teams: 10,000 hands



Newbie Tournament Standings

Rank	Team
5	IllumiBOTi
6	struggleBot
7	BLACKDIAMOND
8	OneOfAKind
9	TheLittleOne
10	SOLID
11	HarvardHustlers
12	DWang
13	DealersChoice

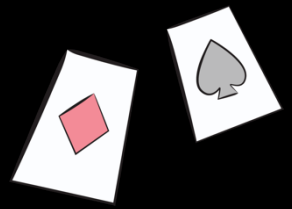


Newbie Tournament 4th place - $100

Congratulations to B3W!

Team Members: James Peraire-Bueno, Chris Sweeney, Ray Wang

Rank	Team
4	B3W

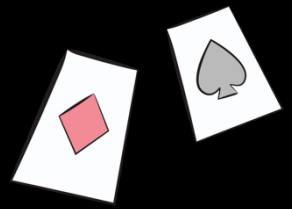


Newbie Tournament 3rd place - $250

Congratulations to RajaBot!

Team Members: Hao Shen, Hanna Lee

Rank	Team
3	RajaBot
4	B3W

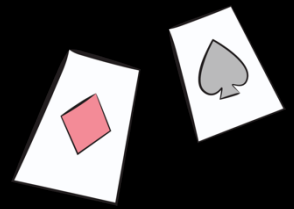


Newbie Tournament 2nd place - $500

Congratulations to TheJoker!

Team Members: Sourav Das, Hyun Jong Kim, Brandon Zeng

Rank	Team
2	TheJoker
3	RajaBot
4	B3W

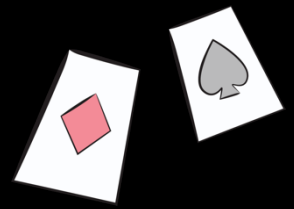


Newbie Tournament 1st place - $1,000

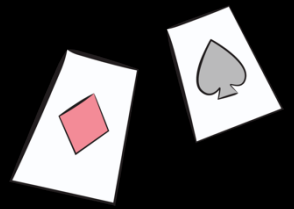
Congratulations to CJK!

Team Members: Courtney Guo, Joseph Lin, Kevin Liu

Rank	Team
1	CJK
2	TheJoker
3	RajaBot
4	B3W



Final Tournament



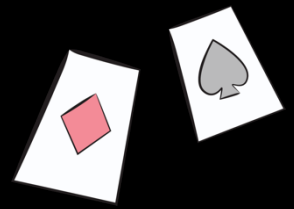
Final Tournament Structure

Cumulative bankroll:

- 38 to 27 teams: 500 hands
- 27 to 18 teams: 1,000 hands

Instant bankroll runoff:

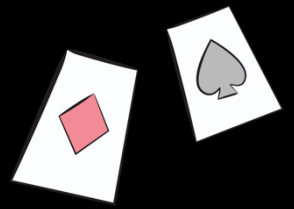
- 18 to 8 teams: 1,000 hands
- 8 to 3 teams: 10,000 hands
- Final 3 teams: 100,000 hands



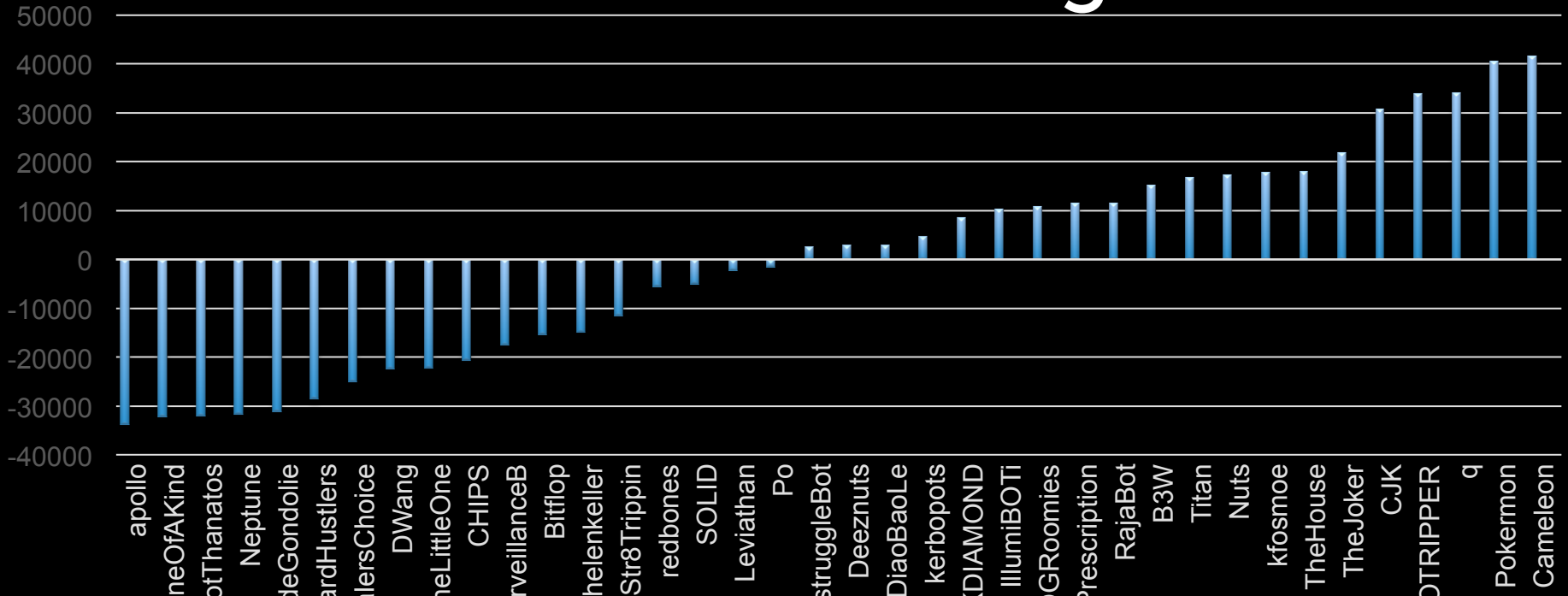
Final Tournament Facts

- 12 million hands were simulated for the final tournament
- It took us 72 hours to run these simulations
- It would take humans roughly 25 years of nonstop playing to do 12 million hands
- Approximately 1,100 royal flushes would occur if all hands are played to the river
- There are approximately 3 hands where a player would hit a straight flush and beat their opponent's four of a kind

Round 1: 38 to 27

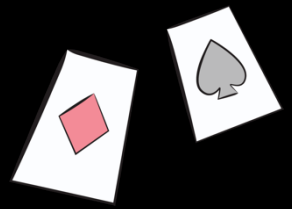


Round 1 Standings

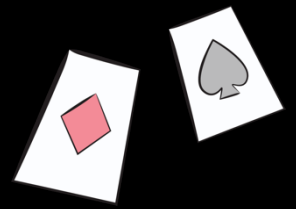


Round 1 Standings

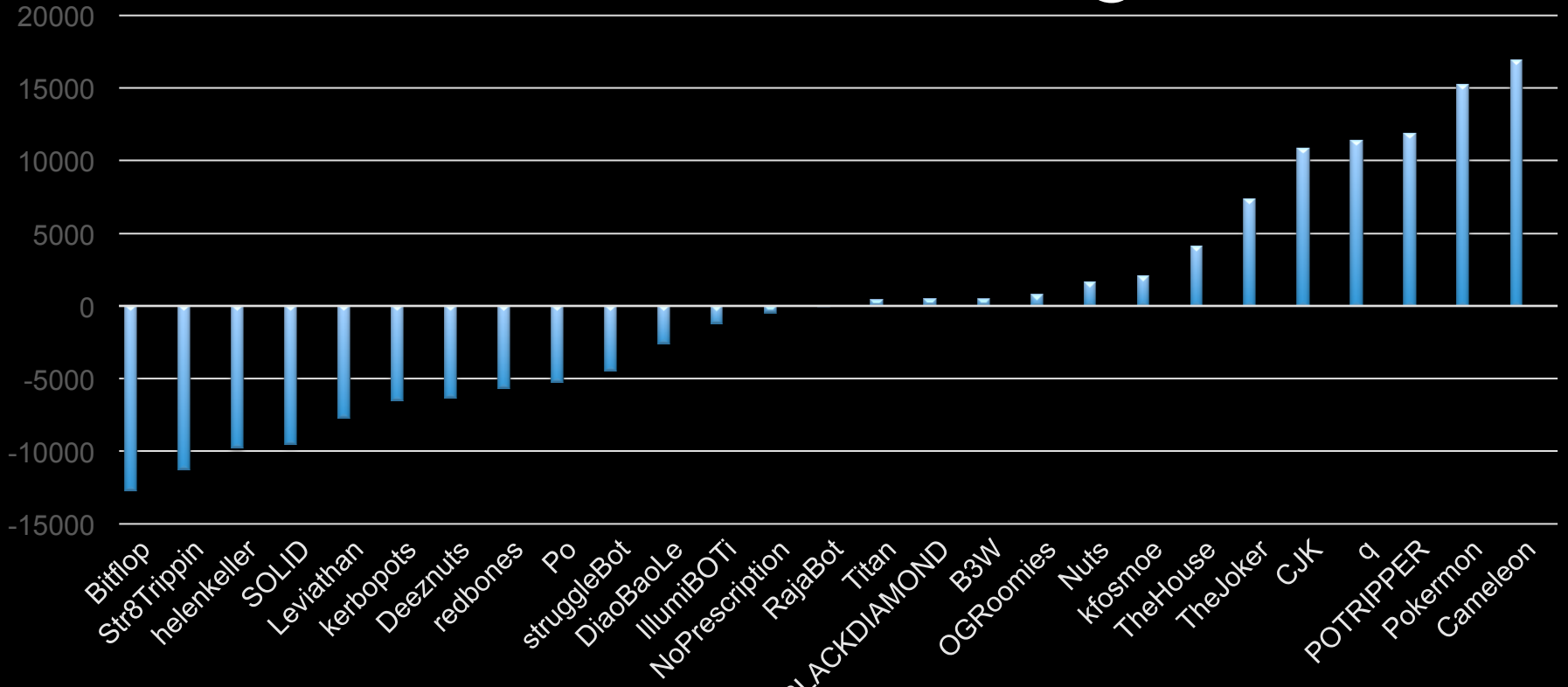
Rank	Team
28	NSASurveillanceB
29	CHIPS
30	TheLittleOne
31	Dwang
32	DealersChoice
33	HarvardHustlers
34	RenegadeGondolie
35	Neptune
36	NotThanatos
37	OneOfAKind
38	apollo



Round 2: 27 to 18

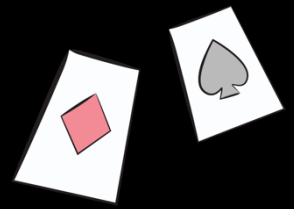


Round 2 Standings

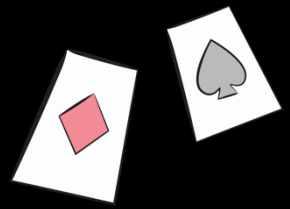


Round 2 Standings

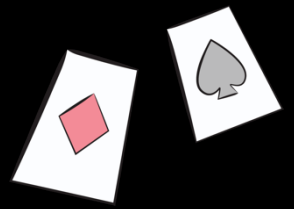
Rank	Team
19	Po
20	redbones
21	Deeznuts
22	kerbopots
23	Leviathan
24	SOLID
25	helenkeller
26	Str8Trippin
27	Bitflop



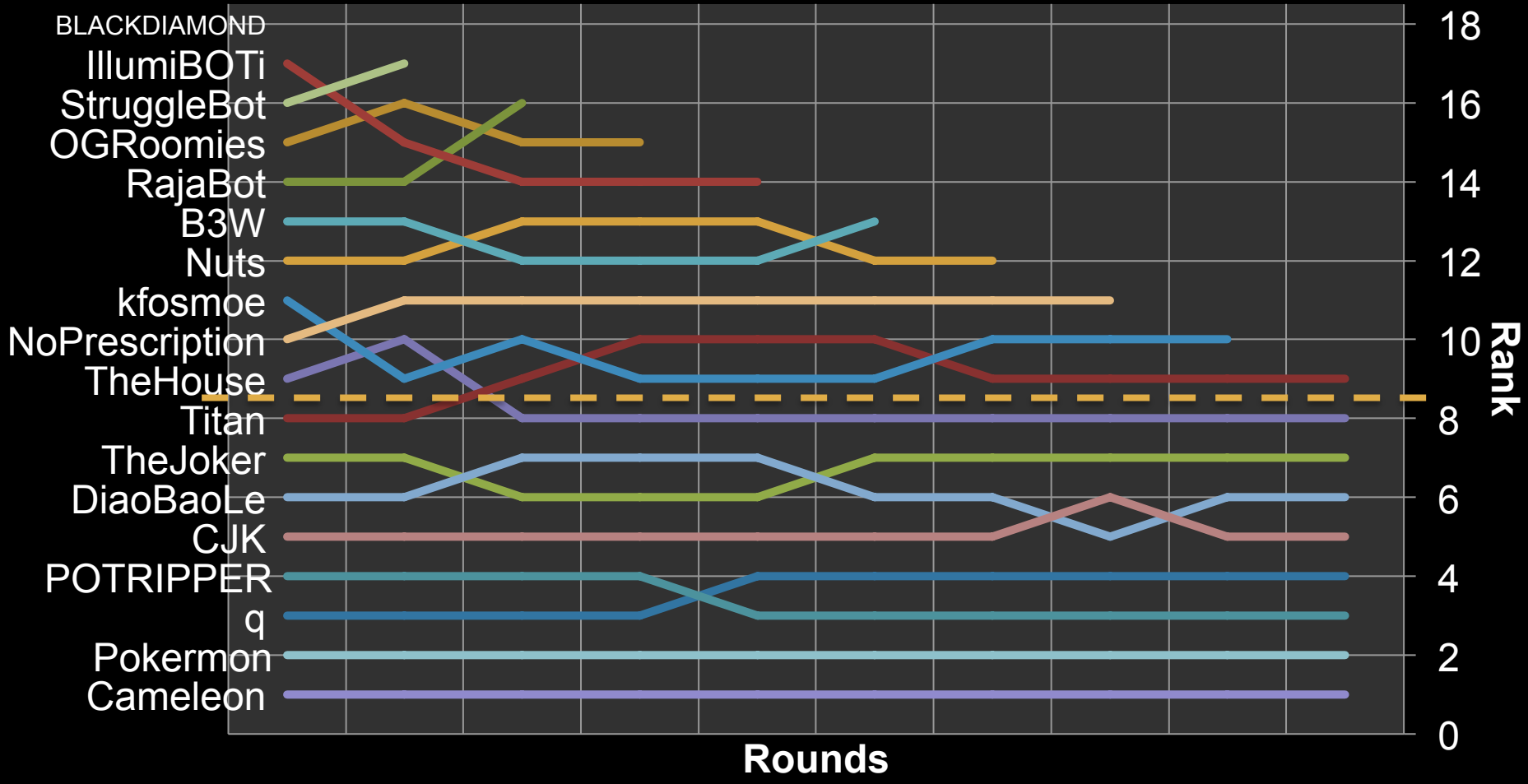
Rank	Team
1	Cameleon
2	Pokermon
3	POTRIPPER
4	q
5	CJK
6	TheJoker
7	TheHouse
8	kfosmoe
9	Nuts
10	OGRoomies
11	B3W
12	BLACKDIAMOND
13	Titan
14	RajaBot
15	NoPrescription
16	IllumiBOTi
17	DiaoBaoLe
18	struggleBot



Round 3: 18 to 8

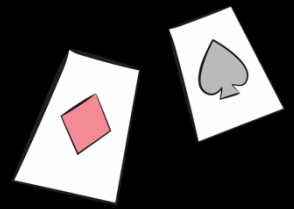


Round 3 Standings



Round 3 Standings

Rank	Team
1	Cameleon
2	Pokermon
3	POTRIPPER
4	q
5	CJK
6	DiaoBaoLe
7	TheJoker
8	TheHouse



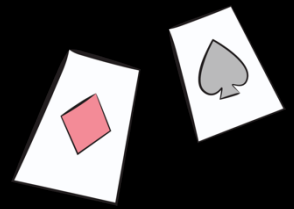
D E Shaw & Co

Creative Strategy Award - $500

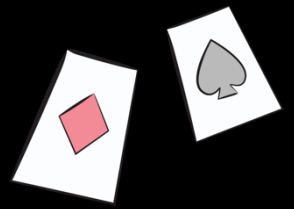
Congratulations to Cameleon!

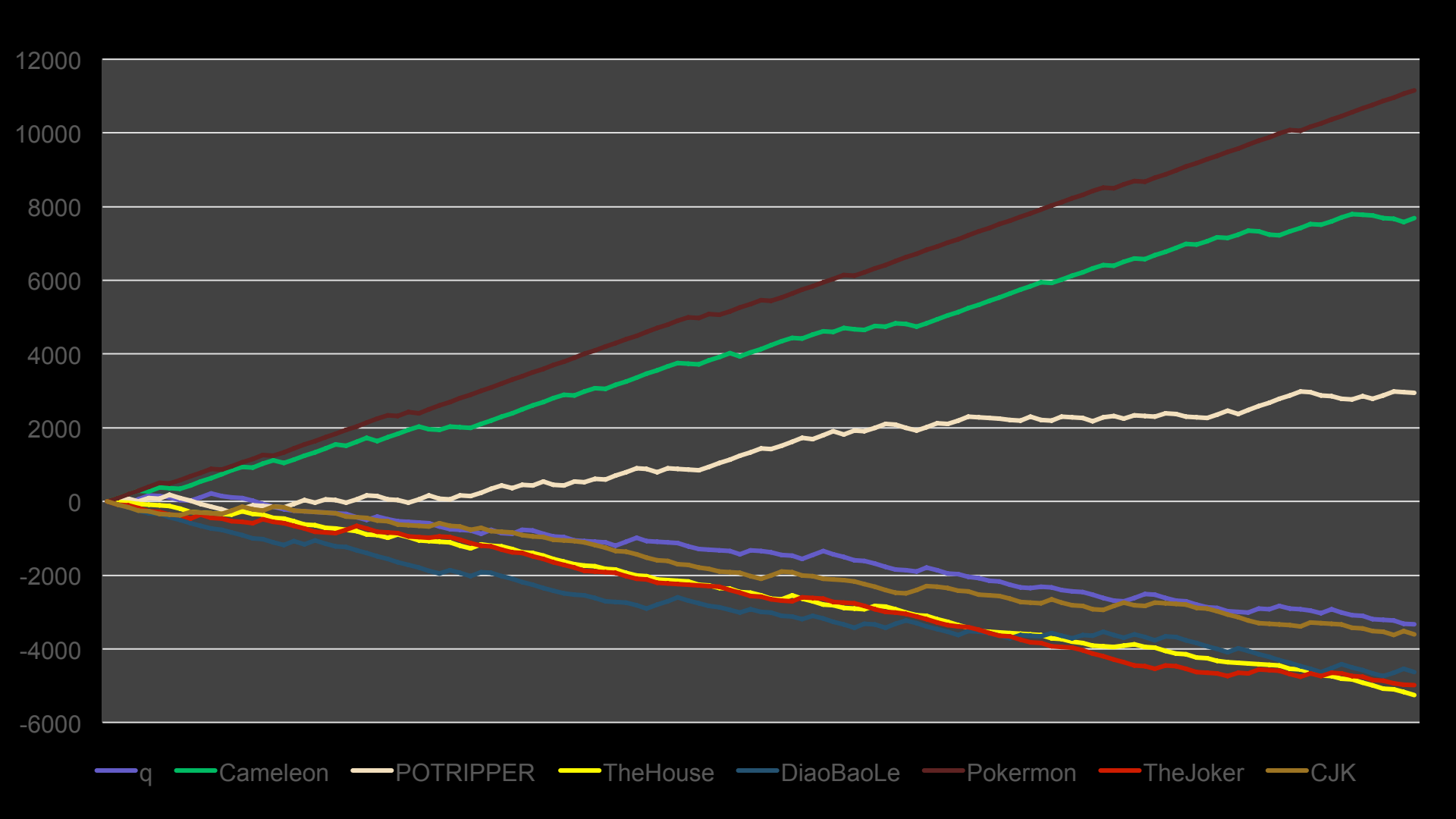
Team Members: Li Yu

- Powerful hand range analyzer
- Able to exploit opponent's betting strategies
- Very aggressive



Round of 8

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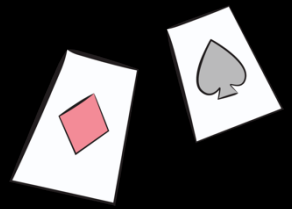
Cameleon
POTRIPPER
TheHouse
DiaoBaoLe
Pokermon
TheJoker
CJK

Final Standings

Rank	Team
8	TheHouse

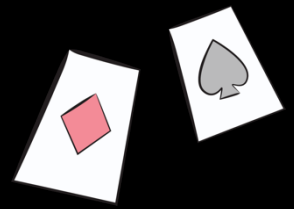


8th place - $500

Congratulations to TheHouse!

Team Members: David Mayo, James McCabe

- 9th in the Casino
- 6th in the Mini Tournament
- VPIP/PFR: 37/16



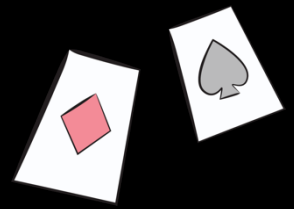
TWO SIGMA

Creative Strategy Award - $500

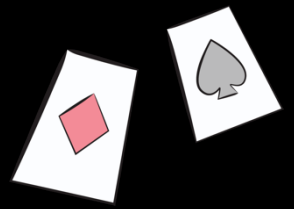
Congratulations to kerbopots!

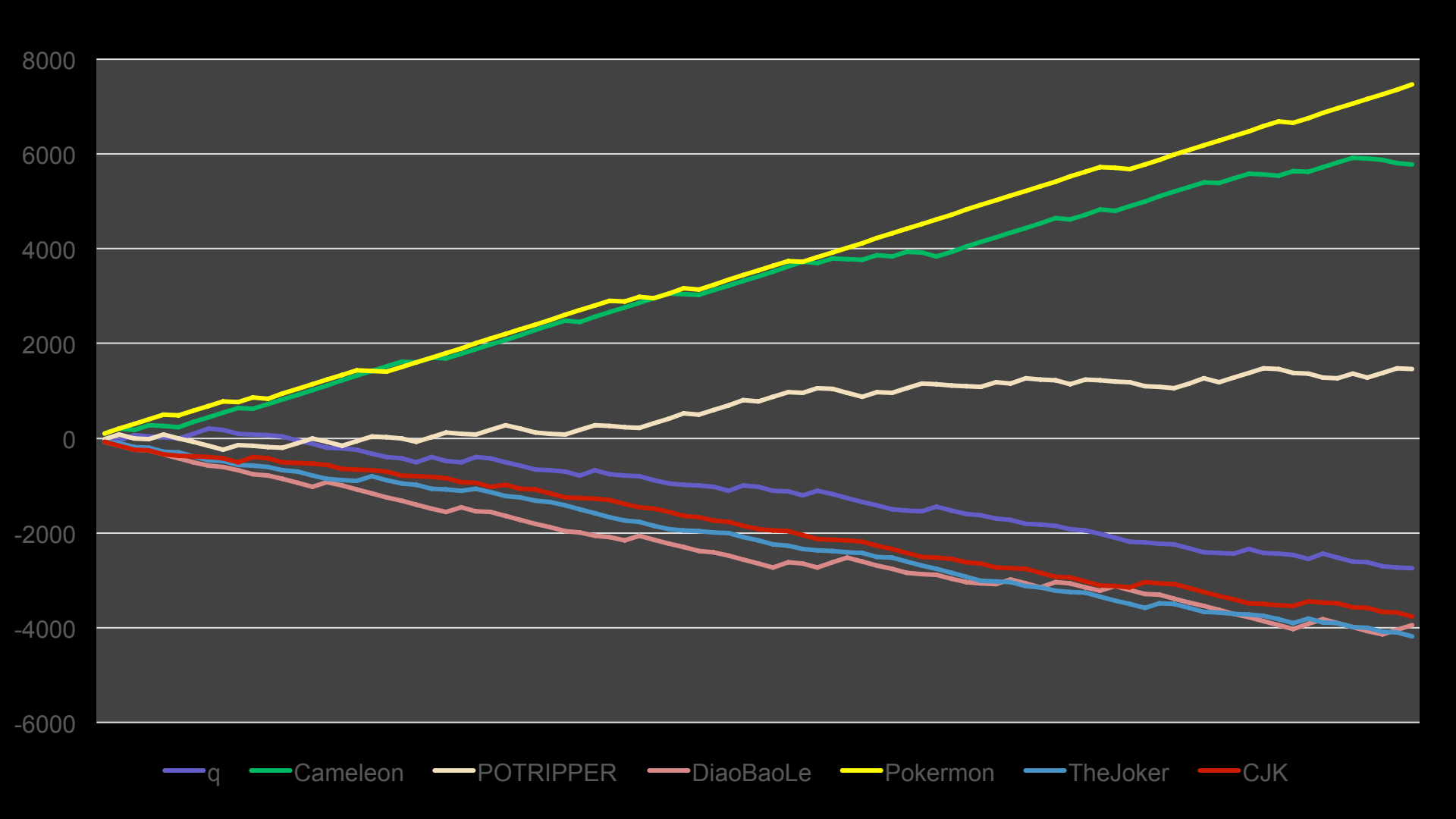
Team Members: Rujian Chen, Hongyi Zhang, Shidan Xu

- Makes decisions based on the Kelly Criterion
- Uses a lot of semi-bluffing and slowplaying tactics to confuse opponents



Round of 7

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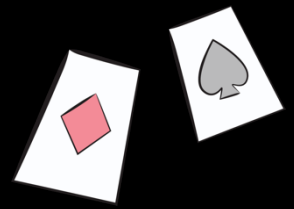
Cameleon
POTRIPPER
DiaoBaoLe
Pokermon
TheJoker
CJK

Final Standings

Rank	Team
7	TheJoker
8	TheHouse

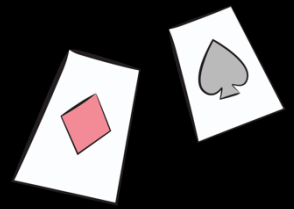


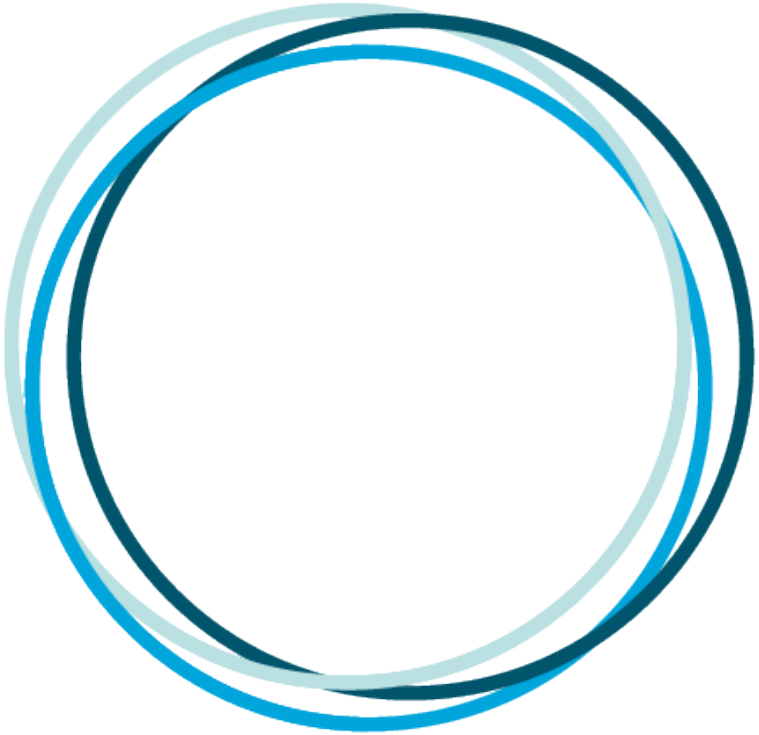
7th place - $1,000

Congratulations to TheJoker!

Team Members: Sourav Das, Hyun Jong Kim, Brandon Zeng

- 10th in the Casino
- 8th in the Mini Tournament
- VPIP/PFR: 27/25





KCG

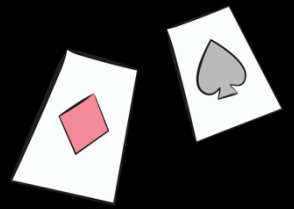
Creative Strategy Award - $500

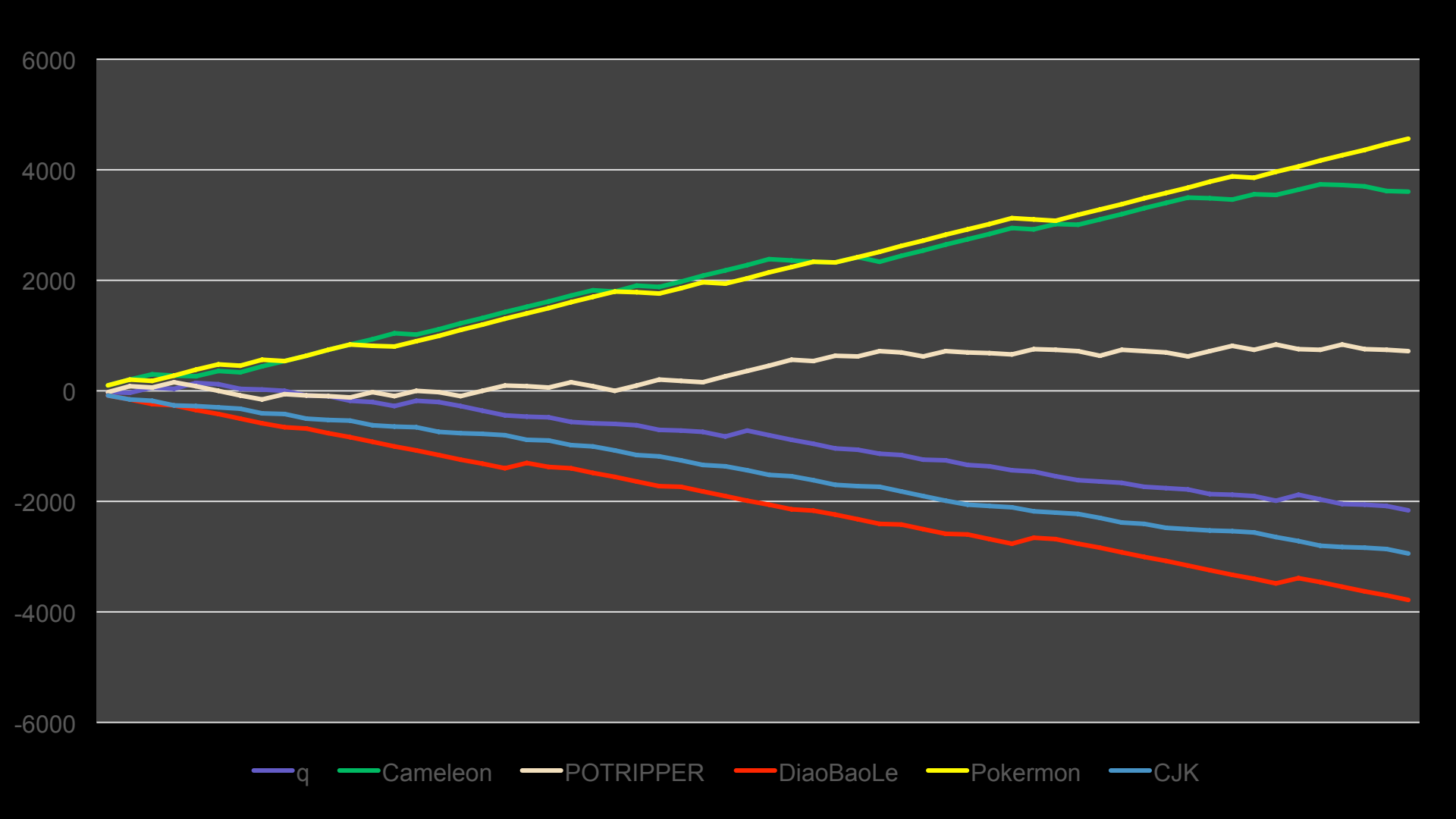
Congratulations to Pokermon!

Team Members: Max Kleiman-Weiner, Daniel Roberts

- Employed an iterative learning algorithm that minimizes regret on all possible actions
- Employed a number of abstractions in order to reduce the game to a reasonable size

Round of 6

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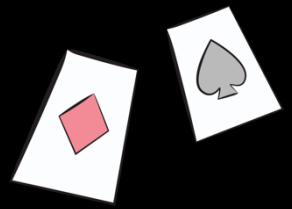
q
Cameleon
POTRIPPER
DiaoBaoLe
Pokermon
CJK

Final Standings

Rank	Team
6	DiaoBaoLe
7	TheJoker
8	TheHouse

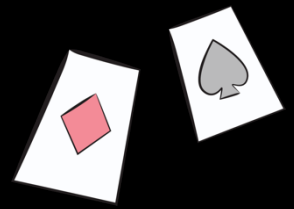


6th place - $1,500

Congratulations to DiaoBaoLe!

Team Members: Wujie Huang, Yongbin Sun

- 27th in the Casino
- 41st in the Mini Tournament
- VPIP/PFR: 99.7/97



would like to congratulate all of the Pokerbots competitors this year for a job well done!

the basic stuff

Akuna Capital is a Chicago-based proprietary trading firm specializing in option market making. We hire traders, quants and developers.

the fun stuff

We were founded in 2011 with only five employees, and are now proud to operate from three offices across the US and one abroad. In 2014 alone, we grew 86%. This is just the beginning for Akuna, and now is an amazing time to join the team.

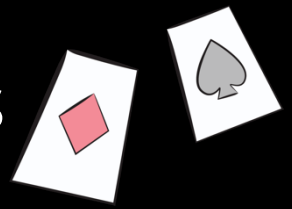
Akuna now has a solid foundation on which to grow, yet still retains an entrepreneurial, start-up vibe due to all of the new opportunities for growth. We think it's a really cool place to work, and encourage you to apply when you're looking for a job or internship!

Creative Strategy Award - $500

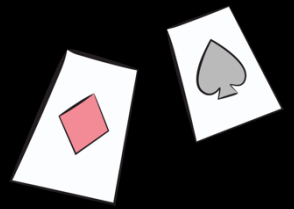
Congratulations to SOLID!

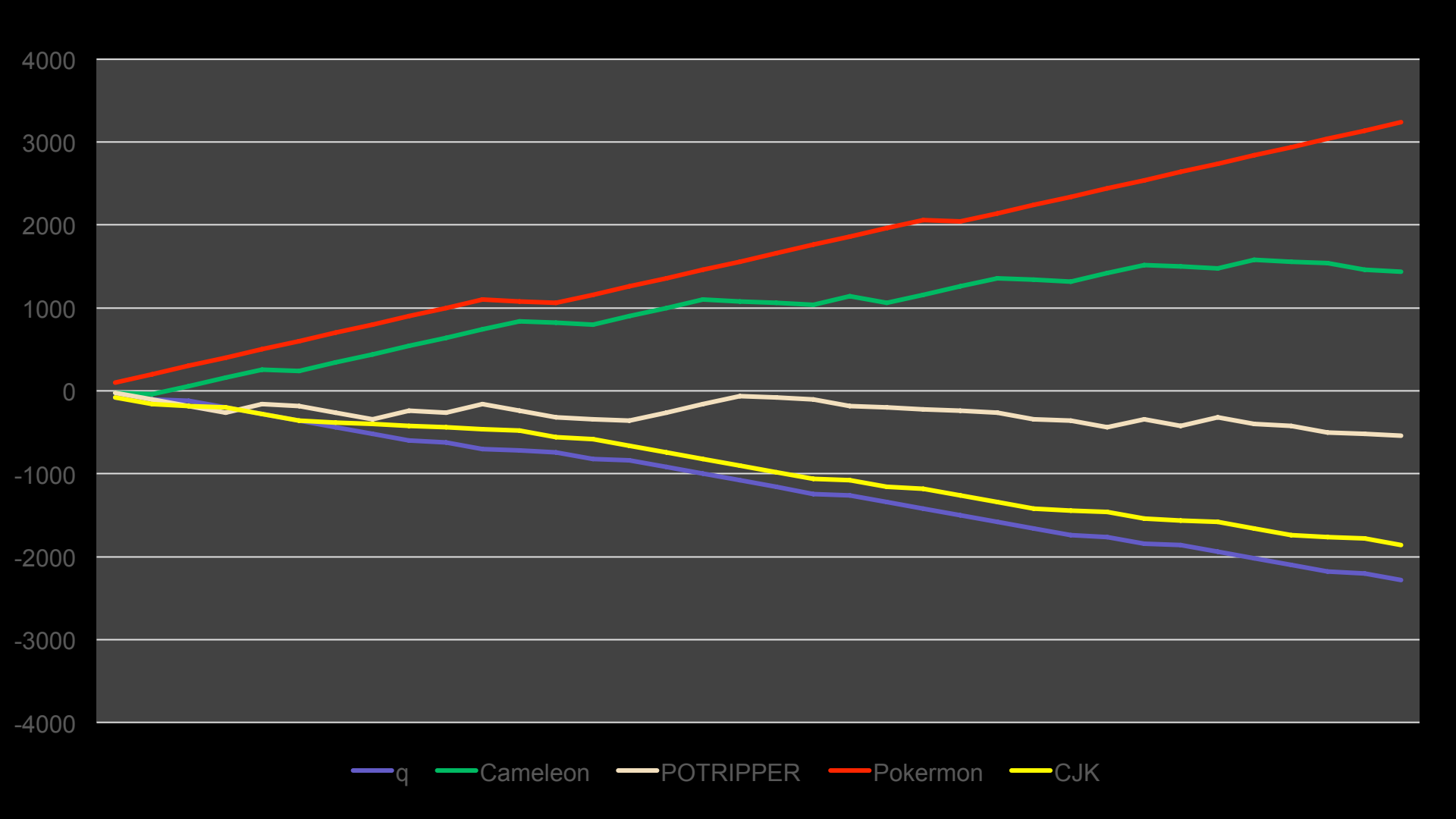
Team Members: Jingyu Li, Jeffrey Lu, Ajay Saini, David Zheng

- Employed neural networks evolved with cross-breeding, mutation, and artificial selection
- Evolved 3,000 generations of pokerbots



Round of 5

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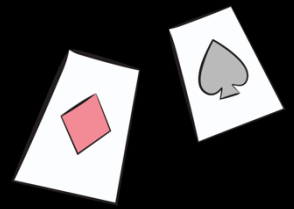
Cameleon
POTRIPPER
Pokermon
CJK

Final Standings

Rank	Team
5	q
6	DiaoBaoLe
7	TheJoker
8	TheHouse

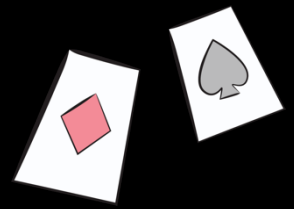


5th place - $2,000

Congratulations to q!

Team Members: David Lu

- 8th in Casino
- 3rd in Mini Tournament
- VPIP/PFR: 46/42



MIT Pokerbots 2015

Citadel Representatives:

Aman Nalavade, Penn ‘10, Computer Science & Engineering

Meredith Jordan, Campus Recruiting

Citadel’s Core Values

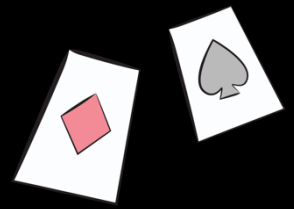
CITADEL

Creative Strategy Award - $500

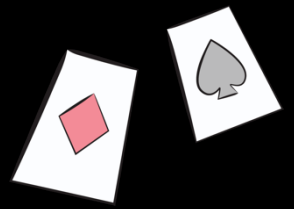
Congratulations to Bitflop!

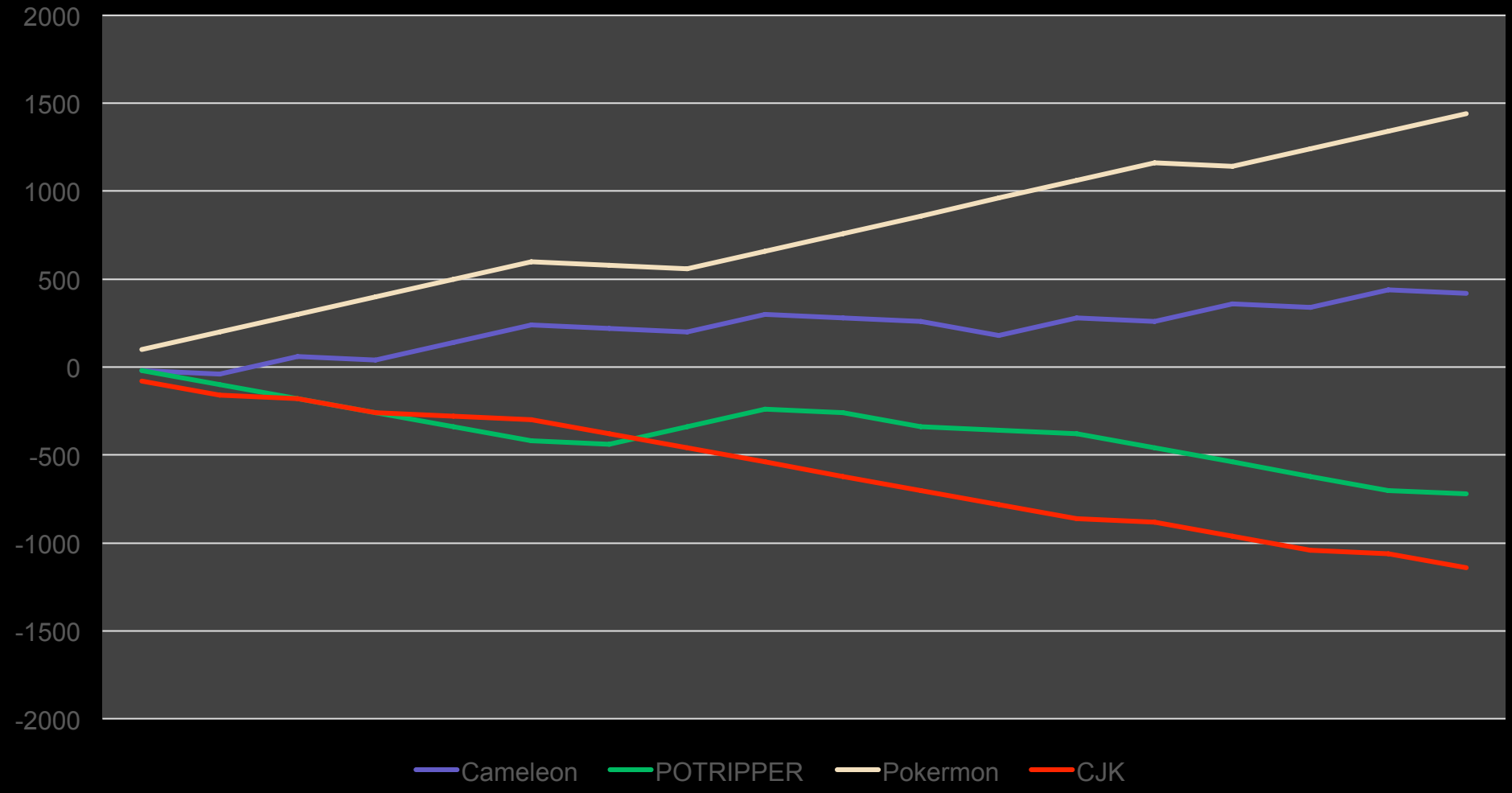
Team Members: Kaustav Gopinathan, Deniz Oktay, Ruifan Pei, Jin Pan

- Uses a PDF of all 1,326 possible hands to assign opponent's range
- Makes best +EV decision based on PDF



Round of 4

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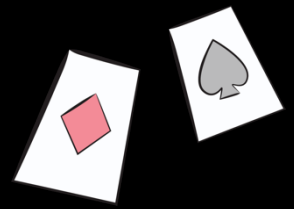
Cameleon
POTRIPPER
Pokermon
CJK

Final Standings

Rank	Team
4	CJK
5	q
6	DiaoBaoLe
7	TheJoker
8	TheHouse

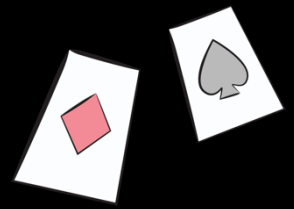


4th place - $2,500

Congratulations to CJK!

Team Members: Courtney Guo, Joseph Lin, Kevin Liu

- 2nd in the Casino
- 1st in the Mini Tournament
- VPIP/PFR: 44/35



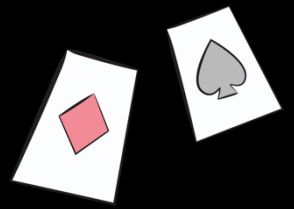
Creative Strategy Award - $500

Congratulations to POTRIPPER!

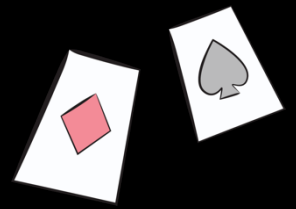
Team Members: Danny Yuan

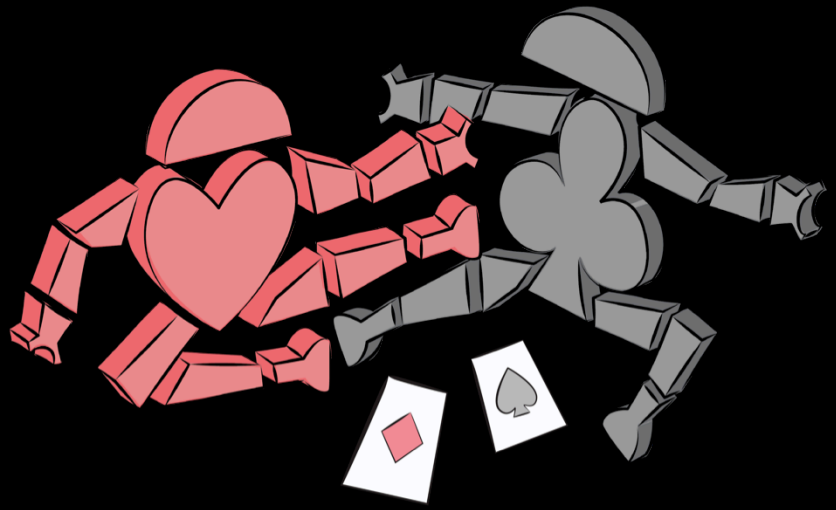
- very in-depth postflop strategy involving GTO poker theory
- utilizes a leak finder which finds weaknesses in opponent's frequency of play

The Final Three

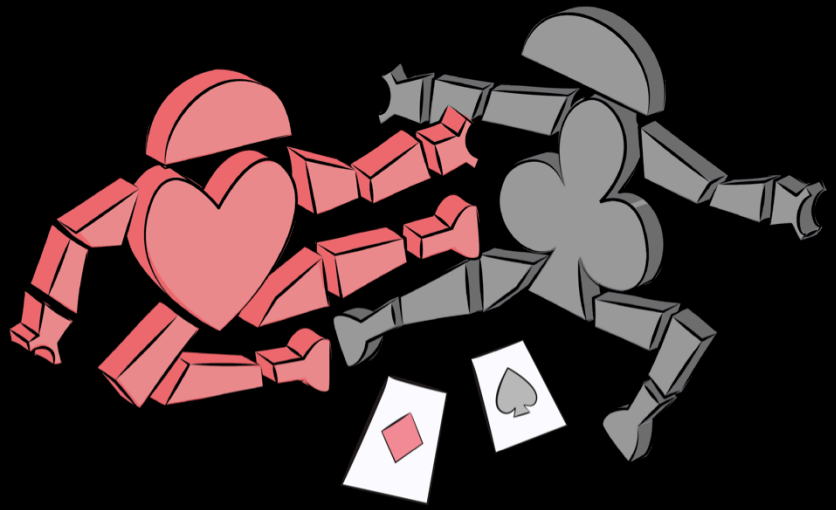


The Final Three	Team Members
Cameleon	Li Yu
Pokermon	Max Kleiman-Weiner, Daniel Roberts
POTRIPPER	Danny Yuan





FINAL THREE HAND PREVIEW

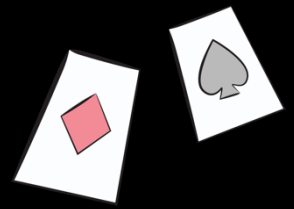


HUMAN VS. BOT

Final Three Results

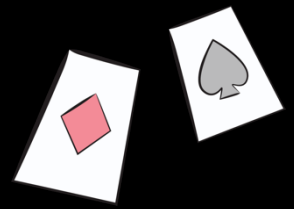
4970 SnG's played

Rank	Team	1st	2nd	3rd	Bankroll



Final Three Results

Rank	Team	1st	2nd	3rd	Bankroll
3	POTRIPPER	760	1900	2310	- $146,800

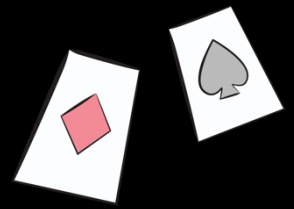


3rd place - $3,000

Congratulations to POTRIPPER!

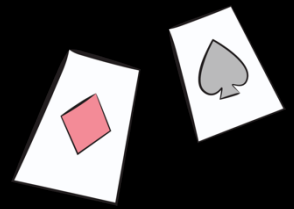
Team Members: Danny Yuan

- 1st in the Casino
- 12th in the Mini Tournament
- VPIP/PFR: 47/27



Final Three Results

Rank	Team	1st	2nd	3rd	Bankroll
2	Cameleon	1866	1220	1884	$11,480
3	POTRIPPER	760	1900	2310	- $146,800

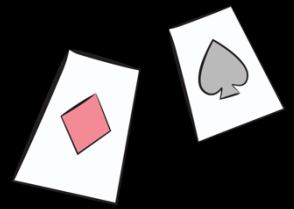


2nd place - $5,000

Congratulations to Cameleon!

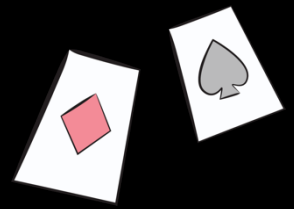
Team Members: Li Yu

- 6th in the Casino
- 17th in the Mini Tournament
- VPIP/PFR: 84/72



Final Three Results

Rank	Team	1st	2nd	3rd	Bankroll
1	Pokermon	2344	1850	776	$135,320
2	Cameleon	1866	1220	1884	$11,480
3	POTRIPPER	760	1900	2310	- $146,800

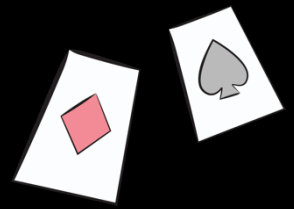


1st place - $10,000

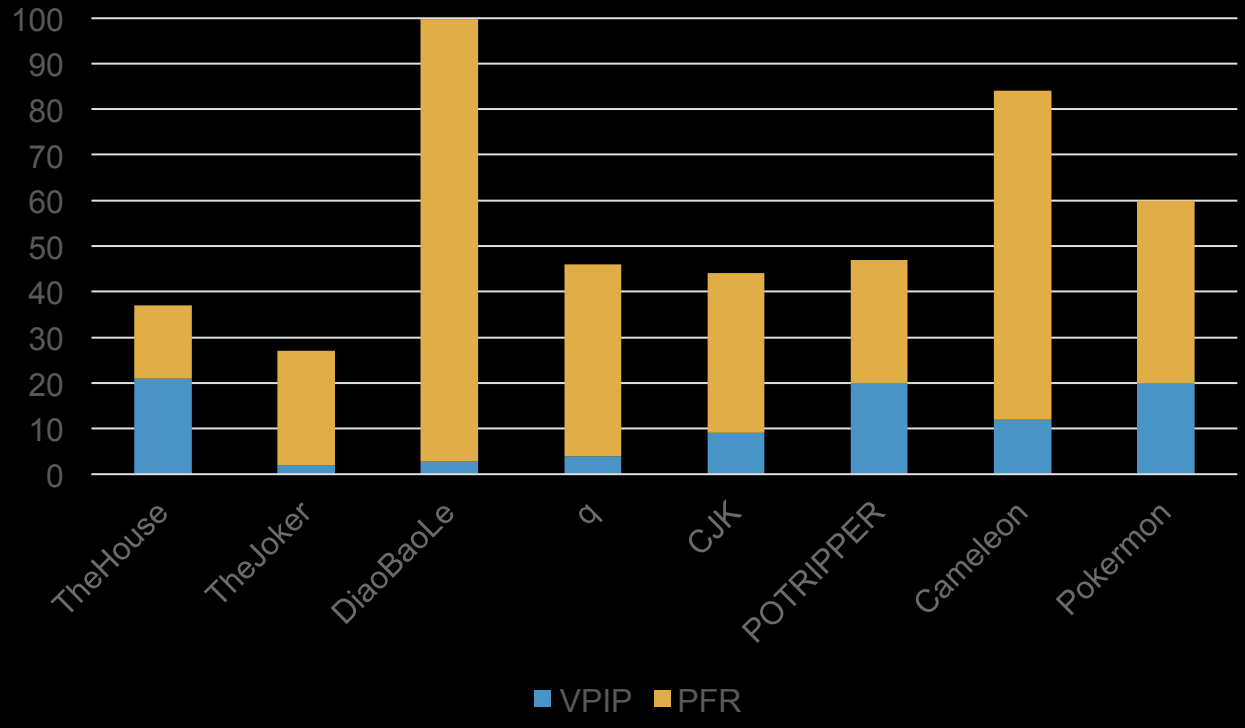
Congratulations to Pokermon!

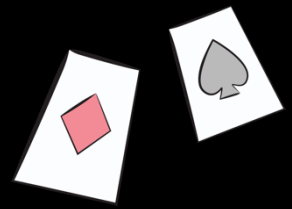
Team Members: Max Kleiman-Weiner, Daniel Roberts

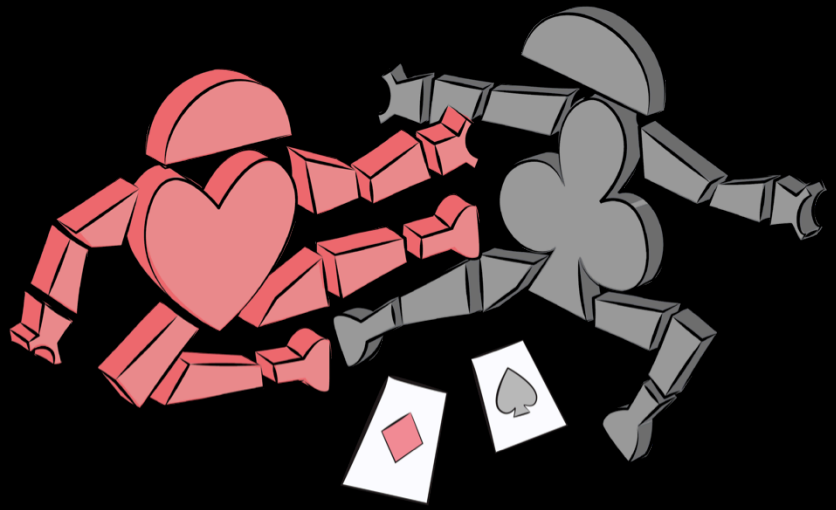
- 7th in the Casino
- 2nd in the Mini Tournament
- VPIP/PFR: 60/40



VPIP/PFR Chart







RAFFLES