

# Disrupting the Disruptors

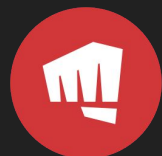
How To Prevent Cheating By Addressing Player Motivation





# Nemanja Mulasmajic

## Work Experience

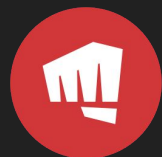


## Favorite Games



# Clint Sereday

## Work Experience



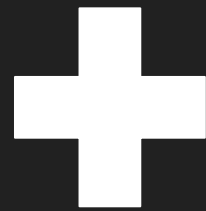
2checkout

## Favorite Games





# How can we design for and cultivate healthy spaces, with a emphasis on proactive approaches?



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**Strategy**

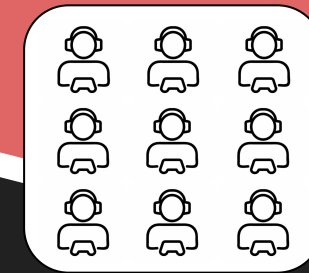
**Story**

# Game Security Layers

**Prevention**

**Detection**

**Deterrence**



**Target**

**Cheat Maker**

**Player**

**Community**

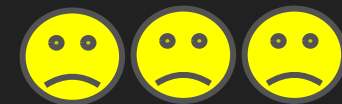
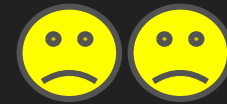
**Cost**

\$

\$\$

\$\$\$

**Negative Impact**



Some of the Best Players...  
Some of the Best Customers...  
Some of the Best Collectors...  
Some of the Best Content makers...

# CHEAT

# Experiencing cheating is the primary reason players try cheating...



Two thirds of player experience cheating

# Why do Players Cheat?



**Content**



**Money**

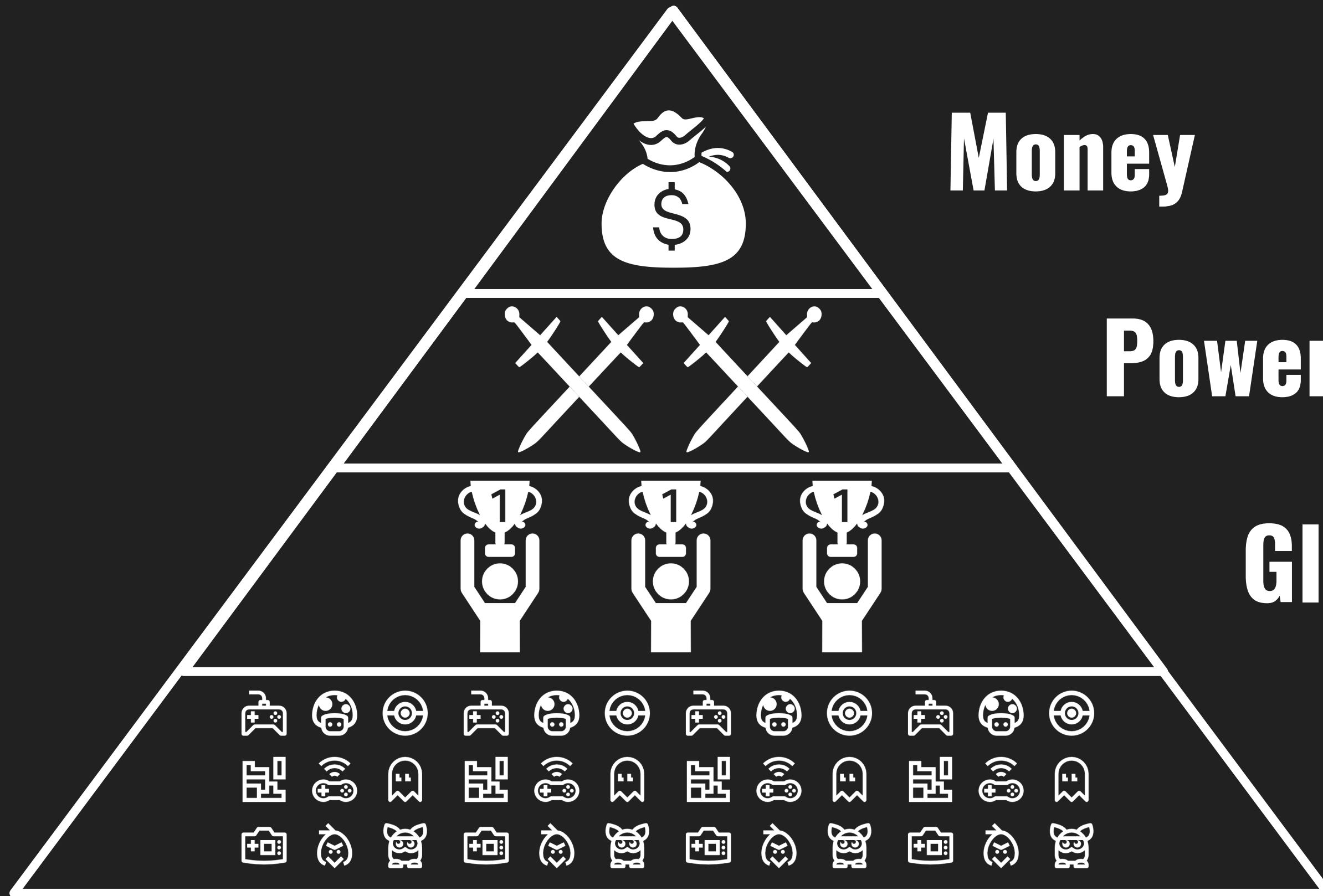


**Glory**



**Power**

知己知彼，百战不殆



**Money**

**Power**

**Glory**

**Content**



# Content



**“I just really LOVE this game!!!”**

## Motivation

- Can't afford content
- Completionist
- Collector
- Modder

## Cheat Examples

- Skin hacks
- Bots/trainers
- ATO/Account selling

# The Skin Code Predicament





## Our Products



**\$43,71**  
Grey Warwick

EUW EUNE NA BR TURK

For your current account



**\$43,71-\$72,44**  
Grey Warwick and Medieval Twitch

EUW EUNE NA BR TURK

For your current account



**\$273,52**  
Triumphant Ryze

EUW NA EUNE OCE Rest of the world

Requires long delivery time.

For your own account



**\$61,20**  
Riot Ward

for all servers! IN STOCK!



**\$98,67**  
100 Referral bundle

EUW EUNE NA OCE For your current account

You get 80 euros worth of RP



**\$48,71-\$136,14**  
Premade Smurf Account + options

EUW EUNE NA OCE BR TURK RU'S LAN LAS

New account



**\$61,20-\$148,63**  
Custom Smurf account + options

EUW EUNE NA OCE BR TURK RU'S LAN LAS

New account



**\$330,98**  
Account #1 - 119 champs, 141 skins -  
JUDGEMENT KAYLE + VIC. ELISE |  
CHAMP THRESH | RARE SKINS | NA /  
ANY REGION

NA Can be transfered!



# We got a problem

## Skin code Redemption

**Skins Granted**

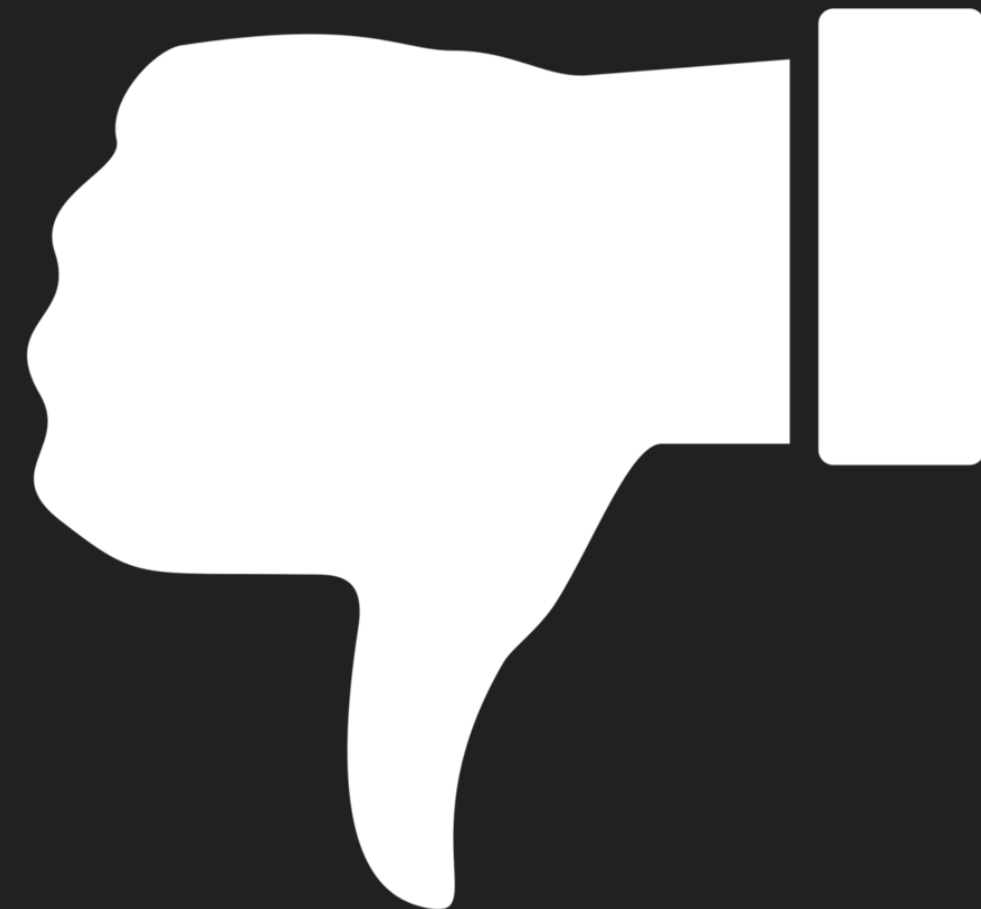
**Event for Skin Code**

**Time**





# Easy Technical Fix



## Disappointed Players

# Tips for addressing the Content Motivated

## Game Design

Achievable content

Hard to automate game loop

## Operations

Content monitoring

Player support comms

## Security Tech

DRM solutions

2FA (Two factor authentication)

# Money

**“Bag alert, major bag alert”**



## Motivation

- Get rich
- Provide for family
- Fund effort

## Cheat Examples

- Account & content selling
- Cheat services
- DDoS/Service attack
- Boosting services



# \$\$\$\$



## Are Cheat Hackers Ruining Online Gaming for Us All?

A recent bust in China shows how widespread online game cheats have become in esports.

## Game makers need to keep up with cheaters

Hacks! An investigation into the million-dollar business of video game cheating

## The Untold Truth Of The Biggest Game Cheating Ring In The World

Report: Cheating Is Becoming A Big Problem In Online Gaming



# Vanguard Launch



Your PC ran into a problem and needs to restart. We're just collecting some error info, and then we'll restart for you.

0% complete



For more information about this issue and possible fixes, visit <https://www.windows.com/stopcode>

If you call a support person, give them this info:  
Stop code: PAGE\_FAULT\_IN\_NONPAGED\_AREA  
What failed: vgl.sys



## HACKER DETECTED

MATCH TERMINATED

YOU HAVE BEEN PUNISHED AND YOUR GAME HAS BEEN CANCELLED. NO WIN OR LOSS HAS BEEN CREDITED



## The controversy over Riot's Vanguard anti-cheat software, explained



## Valorant's Vanguard anticheat is killing CPU coolers on startup

Why Valorant's Vanguard Anti-Cheat has to be changed ASAP (self.pcgaming)

15.8k submitted 1 year ago \* (last edited 1 year ago) by Shun-Pie 2 3 & 24 more



# Valorant's anti-cheat won't automatically shut down your keyboard and mouse anymore

Valorant is getting a little bit less invasive

6639

Upcoming Vanguard changes self.VAORANT

submitted 1 year ago by 0xNemi

While we normally don't plan on documenting changes to Vanguard, our Anti-Cheat system's new update to Vanguard adds a new visual component that will give you, the player, more context to provide some context.

Starting today, Vanguard will start [showing a system tray icon](#) (after a reboot) while it's off Vanguard at any time. Turning off Vanguard puts your machine in an untrusted mode until you reboot. If you want to keep Vanguard off indefinitely until you play VALORANT (e.

## hackerone

### Vanguard Bounty Opportunity

Alongside our new game VALORANT, we have deployed our new anti-cheat solution Vanguard that leverages a kernel driver to combat cheaters more effectively. To reinforce our commitment to our players' security, we are offering special bounties for up to **\$100,000** for high quality reports that demonstrate practical exploits leveraging the Vanguard kernel driver.

#### Scope

Reports for exploits leveraging the anti-cheat kernel driver **vgk.sys**. For more information on Vanguard and its kernel driver, see [/dev/null: Anti-Cheat Kernel Driver](#).

#### Vanguard Bounties

Category	Subcategory	Maximum Bounty
Network attack with no user interaction	Code execution on the kernel level	\$100,000
	Unauthorized access to sensitive data	\$75,000
Network attack requiring user	Code execution on the	\$75,000

# Why anti-cheat software utilize kernel drivers



vmcall

Apr 17, 2020

[You can contact me on twitter if you have any questions](#)

## # Disclaimer

Many of us in [the secret club](#) work as independent or full time security consultants for *many* different companies, including anti-cheat companies, which implicates *Riot Games*. This does not mean I am affiliated with Riot Games, they have no control over what I publish and ***I do not work for them***. I am disclosing this because I woke up to some minor harassment, after someone on Reddit posted my personal linked-in, which explicitly states that I have participated in their bug bounty program. Participating in a bug bounty program does not make me an employee.

## # Vanguard

Recently, there have been [numerous threads](#) on reddit concerning the release of [Valorant's](#) anticheat dubbed "Vanguard". The main skepticism is the fact that it is potentially privacy-invasive, which is a completely valid theory. I am not undermining the privacy complications that follows running third-party applications on your personal machine, but a lot of the information regarding the possibility of surveillance in user mode versus kernel mode is flawed. There were few posters arguing against the "kernel = bad" hivemind, but the majority of gamers does not know what this means from a security aspect.

Unlike most of the people discussing the use of kernel mode in anti-cheats, I have years of experience in game-hacking (on both sides). My employer is completely unrelated to video games, and therefore I would say I am able to come with an unbiased approach to most of these statements. Listening to anonymous "internet experts" is always a bad idea, but anyone with programming experience is more than welcome to tear apart my previous research publications on this website or on [my GitHub](#).

In the following paragraphs, I've cherry-picked some statements that many users on Reddit were broadcasting, and i will discuss them to the best of my ability:

## # Point 1 (What is kernel?)

*Vanguard is running on "Ring 0" (Explanation about the "rings" on-demand), the essential system-level ("kernel-mode driver") of your computer. which means without some serious knowledge you CAN'T even*



# Tips for addressing the Money Motivated

## Game Design

Security in design

Cheat QA testing

## Operations

Legal effort

Cross company  
collaboration

## Security Tech

Code protection

Network obfuscation

# Glory



**“I just want to win!!!”**

## Motivation

- Competition
- Rank and status is important
- Matchmaking sucks

## Cheat Examples

- Aimbots/ESP
- Auto Combos
- Boosting service



# The Scripter Meta





# The Scripter Meta





# PLAYERS COMPLAINING ABOUT CHEATS

INFLUENCER FRUSTRATIONS

MONITORING ISSUES

CHEATERS IN HIGH RANK

NO PLAYER VISIBILITY INTO EFFORT

WEAK MESSAGING

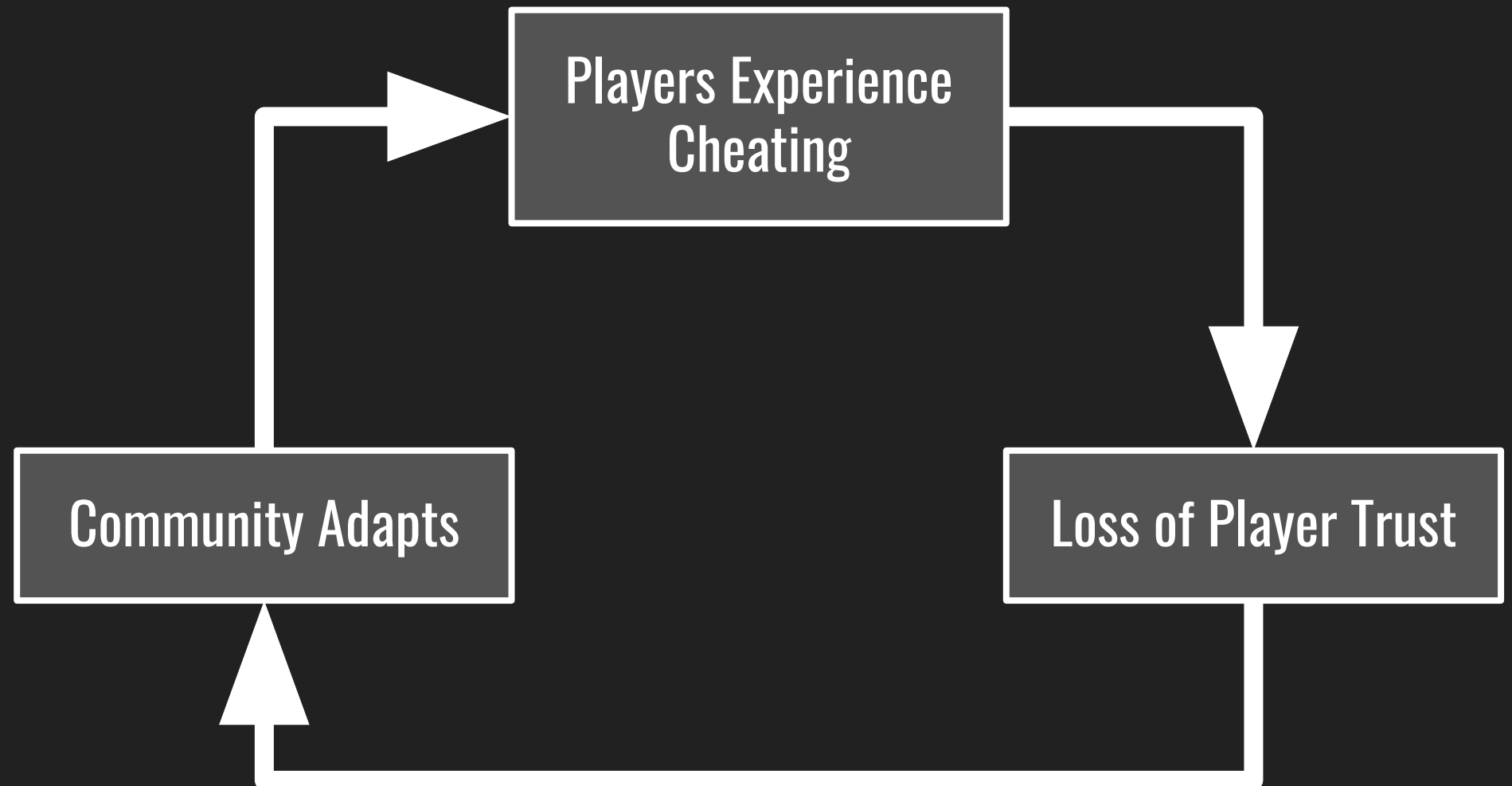
BAD OPERATIONAL PROCESS

NEW DARKMARKET THREATS

UNKNOWN SYSTEM ISSUES



**Failed Players  
Expectations**





# Perception

# Reality



# Tips for addressing the Glory Motivated

## Game Design

Rewards at all Ranks  
Human possible game mechanics

## Operations

Clear rules and consequences  
Ladder monitoring

## Security Tech

Game play detection  
Account risk scoring

# Power



**“Now I am become Death, the destroyer of worlds”**

## Motivation

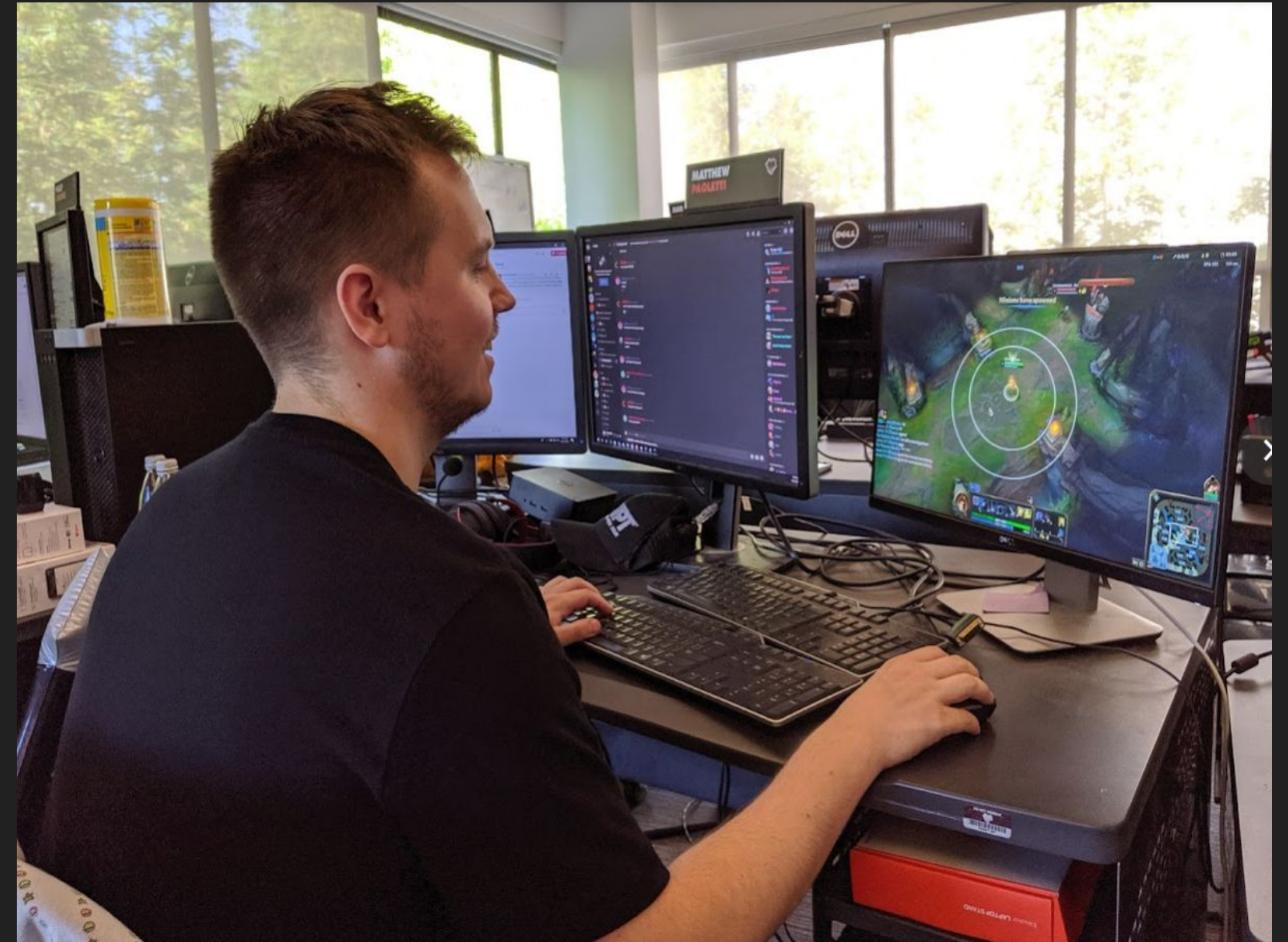
- Trolling
- Reverse engineering
- Cheating community status

## Cheat Examples

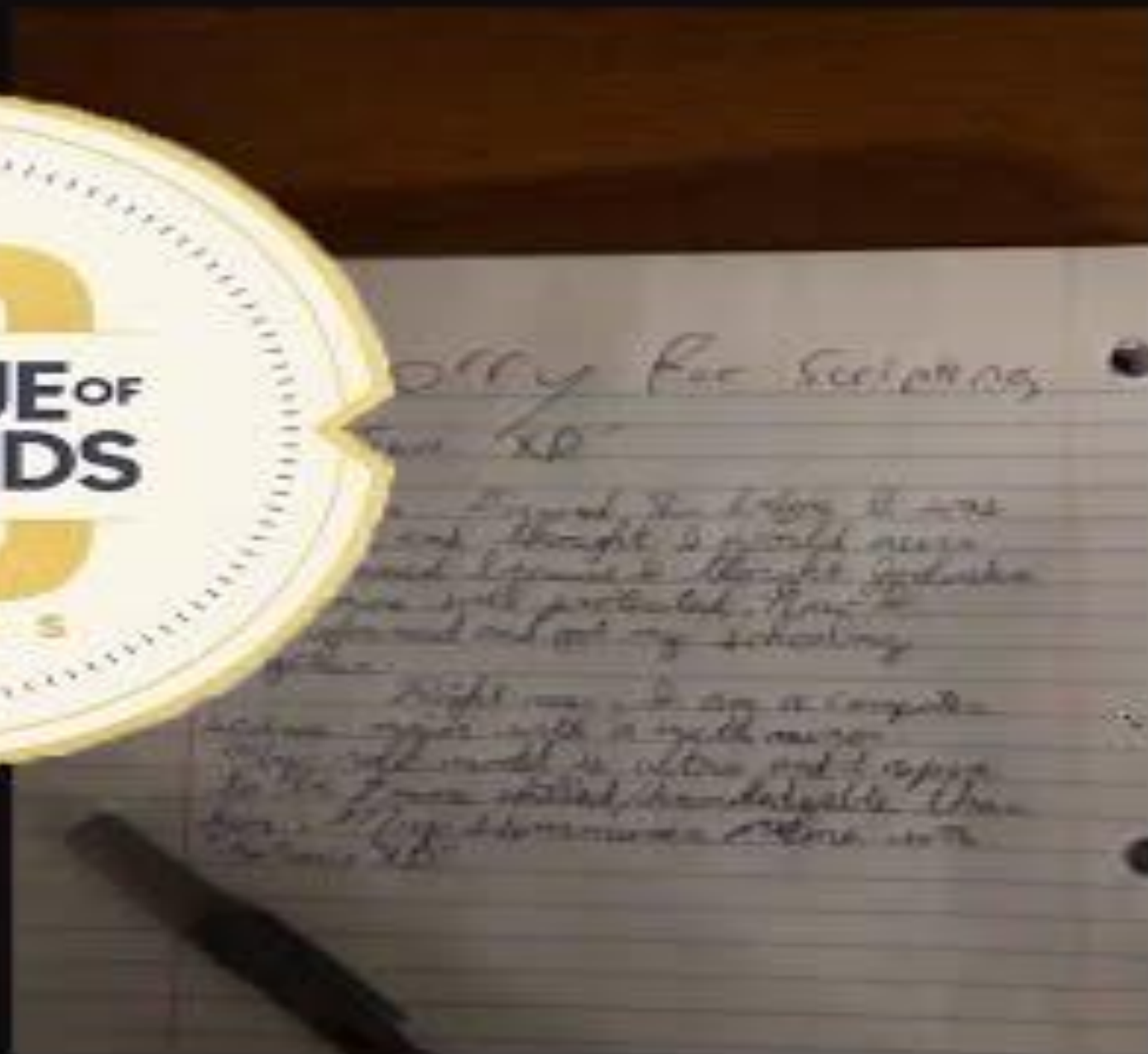
- Drophacks
- Spambots
- Stream sniping / matchmaking exploits



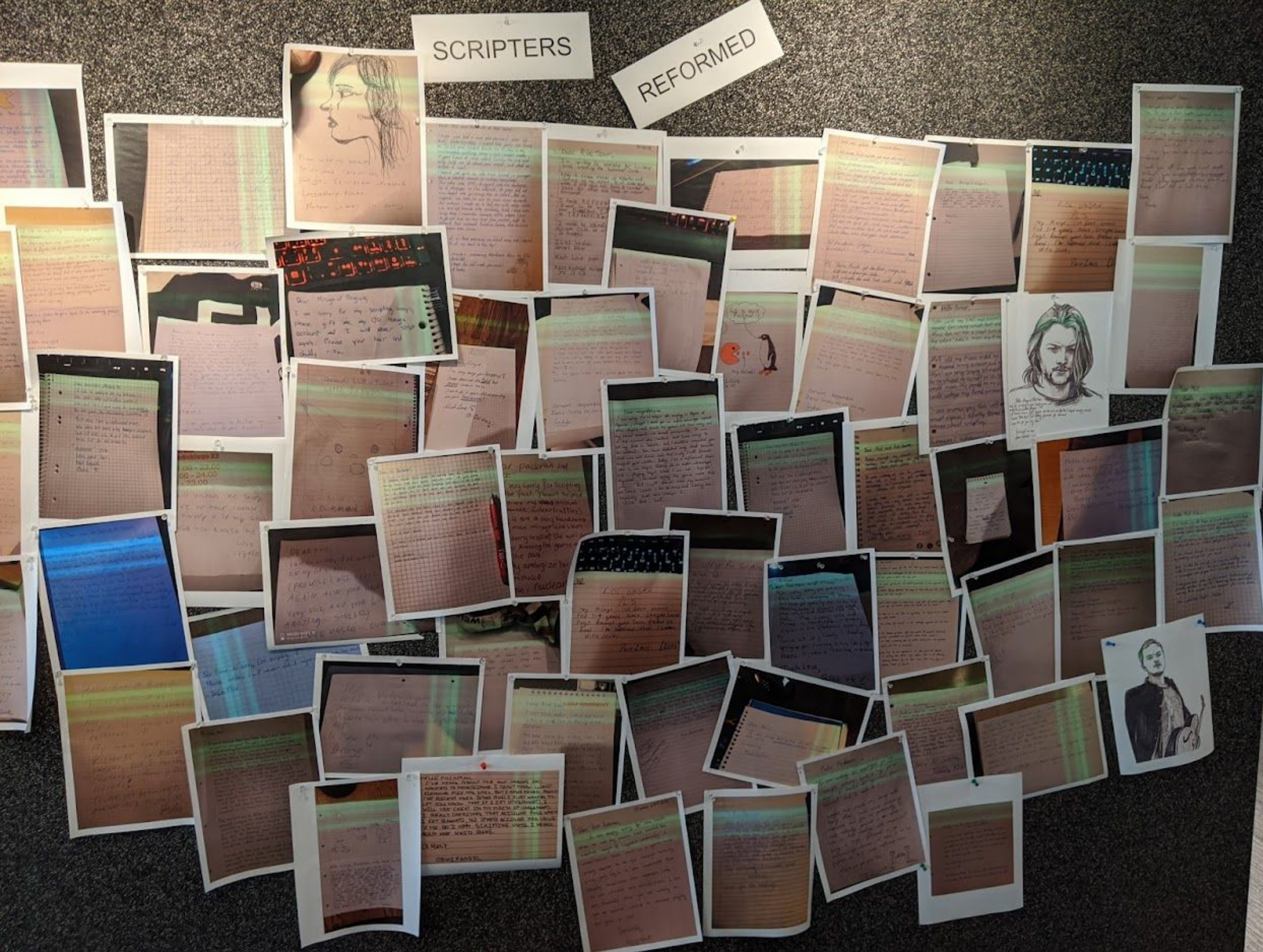
# Cheater 1v1s











# Cheaters Reformed



# Tips for addressing the Power Motivated

## Game Design

Reduce systems that can be  
used for trolling

Increase barrier of entry for  
new accounts

## Operations

Chat and community  
review

Influencer survey

## Security Tech

Device bans  
DDoS protection

# Key Takeaways

1. Some of your best players will cheat
2. Prevention should be the goal
3. Addressing motivation is key to prevention



# Thank You

BYFR ●

# Questions?

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**March 21-25, 2022** | San Francisco, CA **#GDC22**

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