

**RSA®**Conference2022

San Francisco & Digital | June 6 – 9

**TRANSFORM**

SESSION ID: HUM-T09

# Reaching Gen Z: Cybersecurity Outreach with Viral TikTok and YouTube Content

**Kody Kinzie**

Security Researcher  
Varonis Systems  
@KodyKinzie



# Disclaimer

Presentations are intended for educational purposes only and do not replace independent professional judgment. Statements of fact and opinions expressed are those of the presenters individually and, unless expressly stated to the contrary, are not the opinion or position of RSA Conference LLC or any other co-sponsors. RSA Conference does not endorse or approve, and assumes no responsibility for, the content, accuracy or completeness of the information presented.

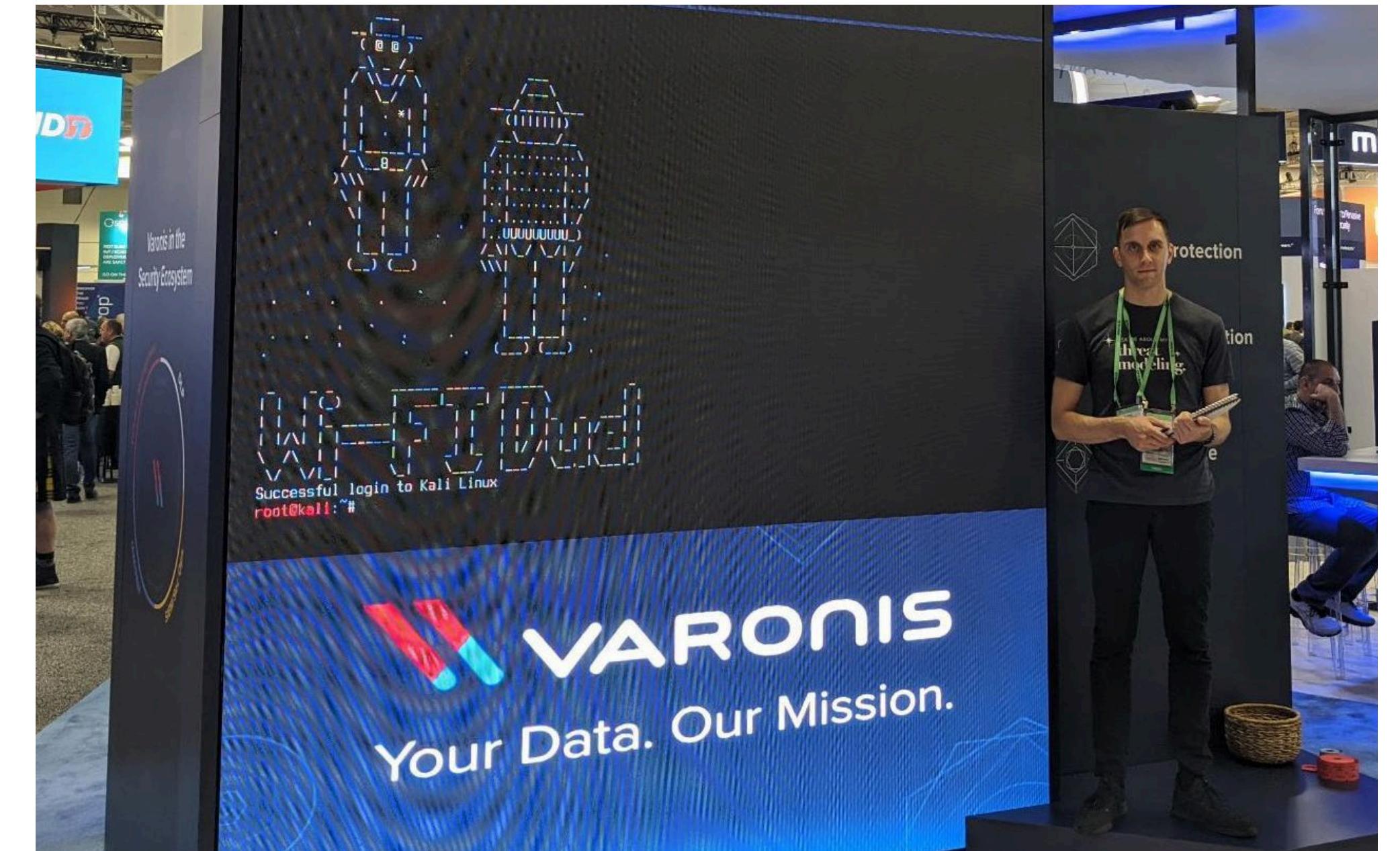
Attendees should note that sessions may be audio- or video-recorded and may be published in various media, including print, audio and video formats without further notice. The presentation template and any media capture are subject to copyright protection.

©2022 RSA Conference LLC or its affiliates. The RSA Conference logo and other trademarks are proprietary. All rights reserved.

# Who am I?

I'm Kody Kinzie

- Ethical hacker
- Security researcher at Varonis
- Wi-Fi and open source intelligence specialist
- Creator of the Null Byte YouTube channel
- Host of Hak5 and SecurityFWD YouTube channels
- Designer of ethical hacking hardware tools

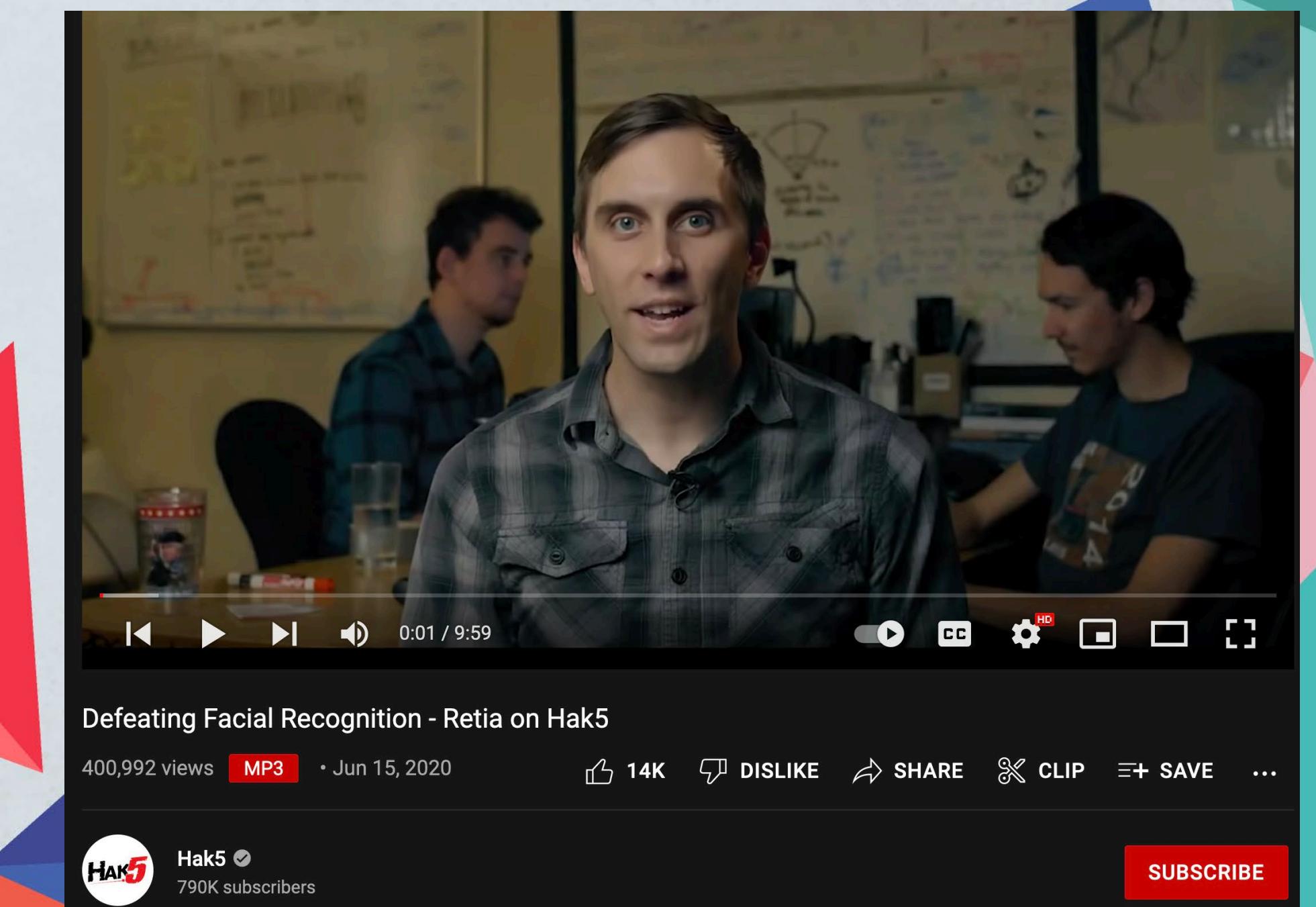
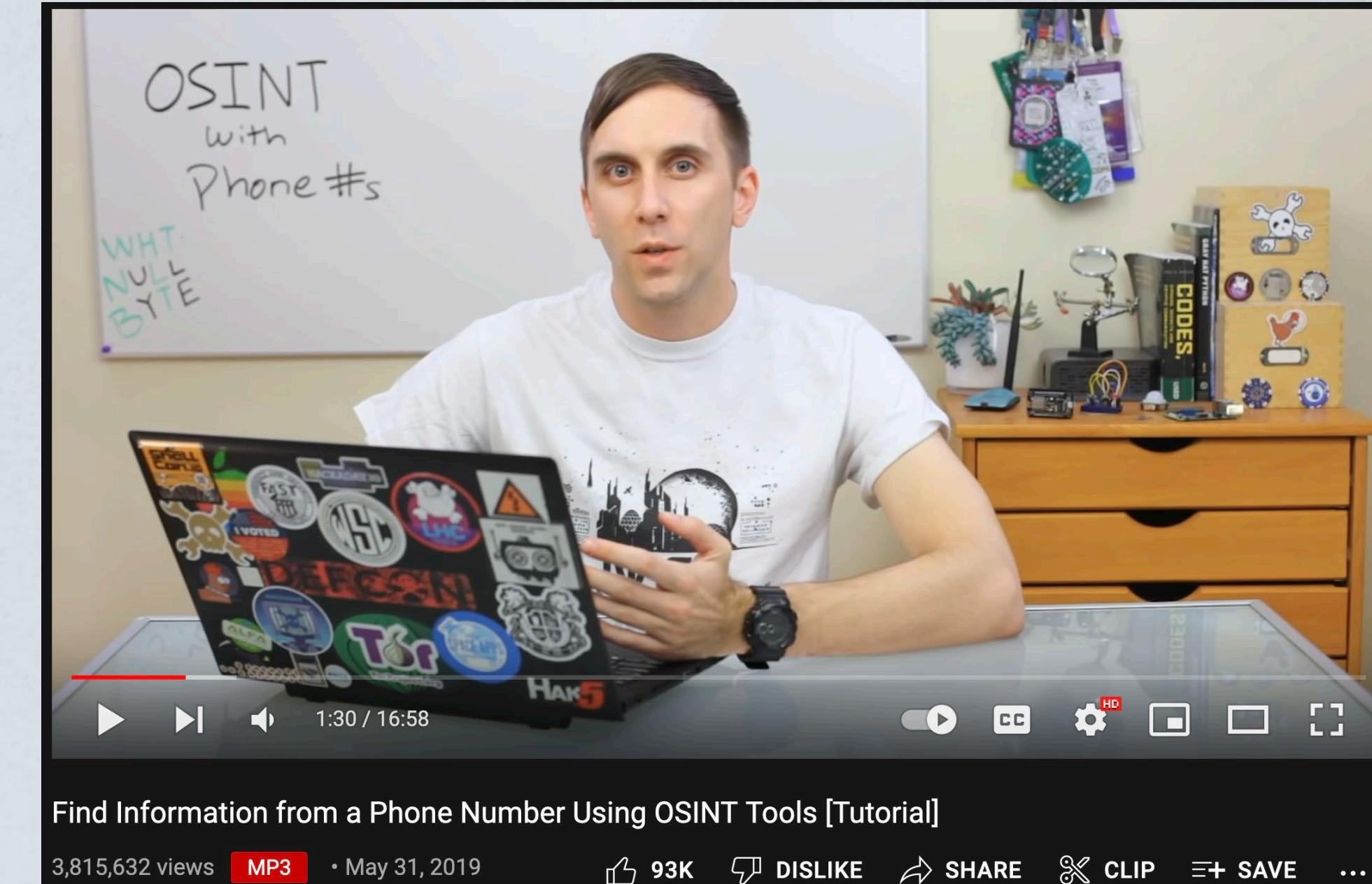


# RSA® Conference 2022

## What is my job?

Engage beginners with social cybersecurity content.

The goal: Make ethical hacking accessible to the next generation of professionals.



RSA® Conference 2022

Why make ethical hacking  
content for beginners?



# Access to talent and brand reputation

- Written guides don't engage younger viewers
- Traditional content spreads slowly
- Gen Z is overlooked by traditional advertising approaches
- Great content breaks out of niches to go viral
- Free content makes ethical hacking accessible to young talent

# RSA® Conference 2022

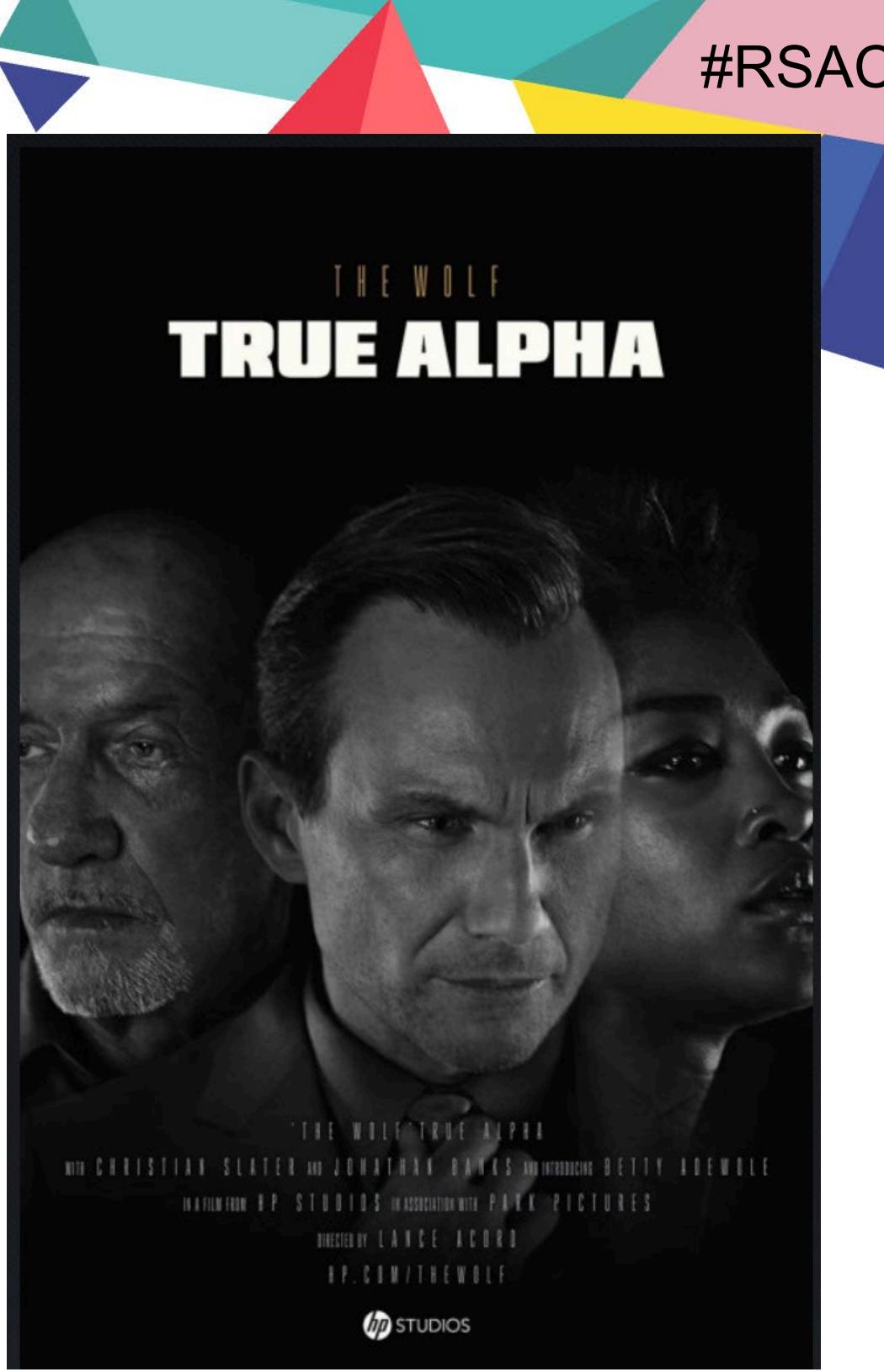
## Cybersecurity content formats

What is already out there?



# High-production quality commercials

- Produce a star-studded, printer-heavy narrative
- Extremely expensive and high quality
- Hard for everything to involve a printer
- Can create unfulfilled expectations



## User reviews 1 >

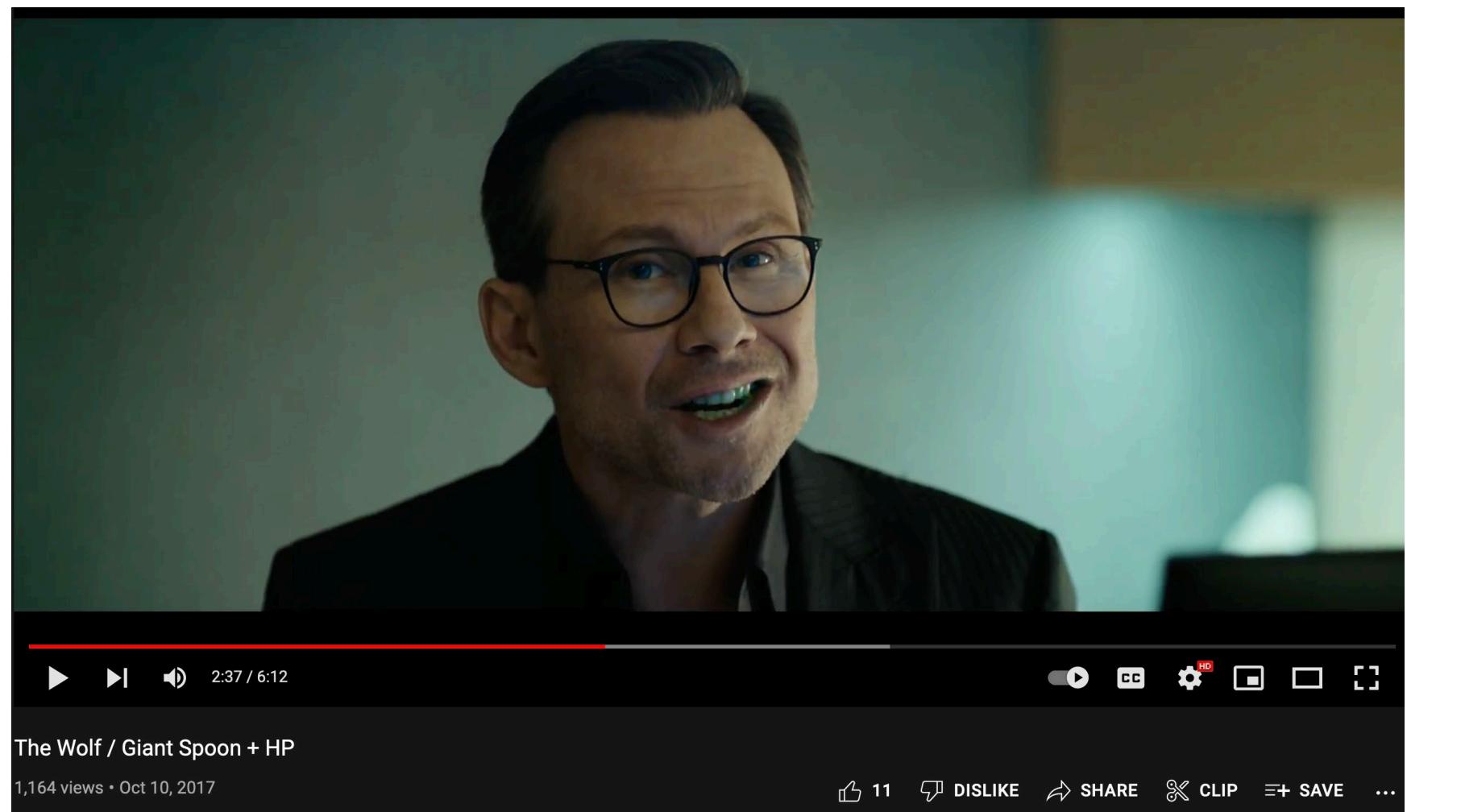
[TOP REVIEW](#)

**Huge disappointment**

I tuned in because it features Jonathan Banks. Turns out it is just a heavily produced commercial for HP printers.

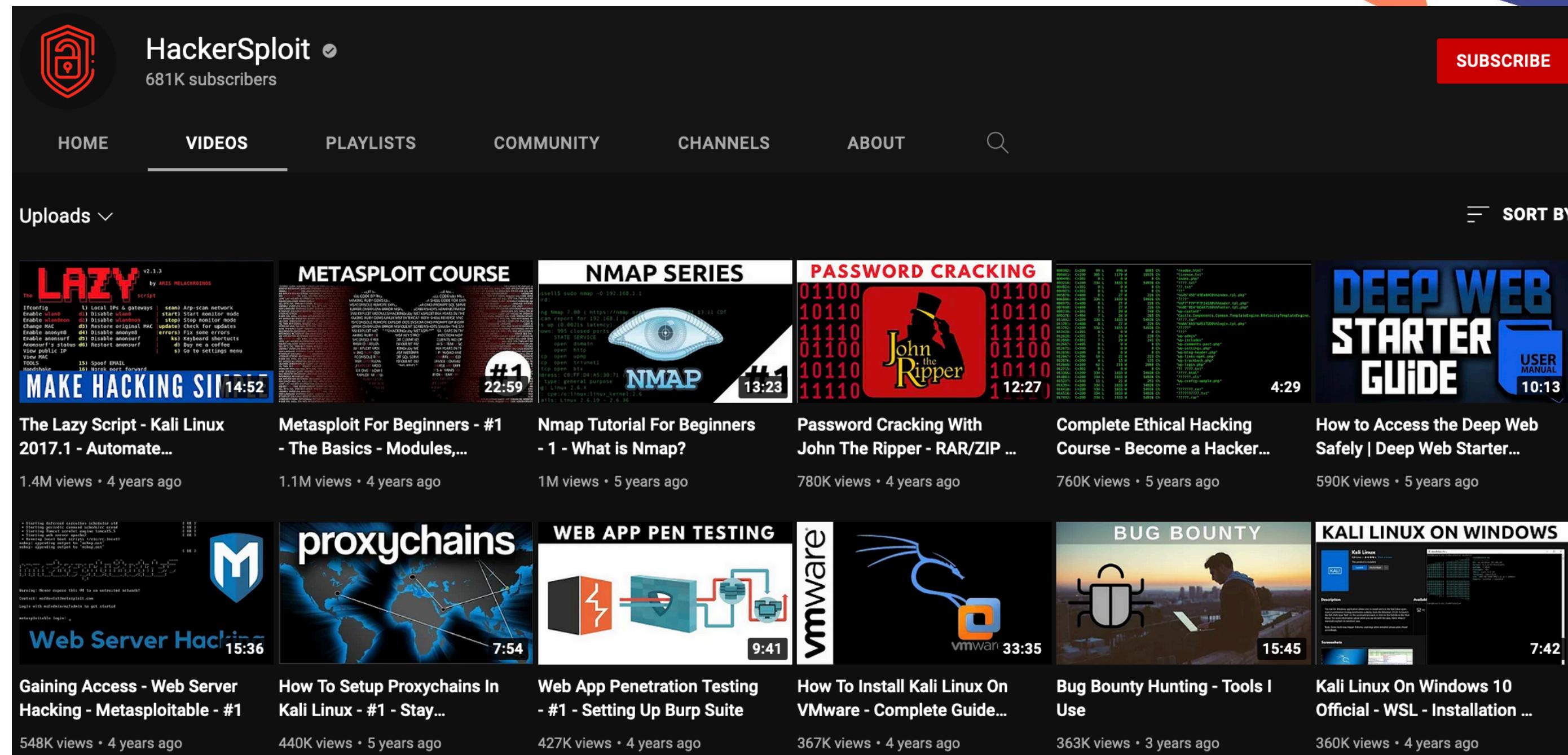
1/10

helpful • 13    3



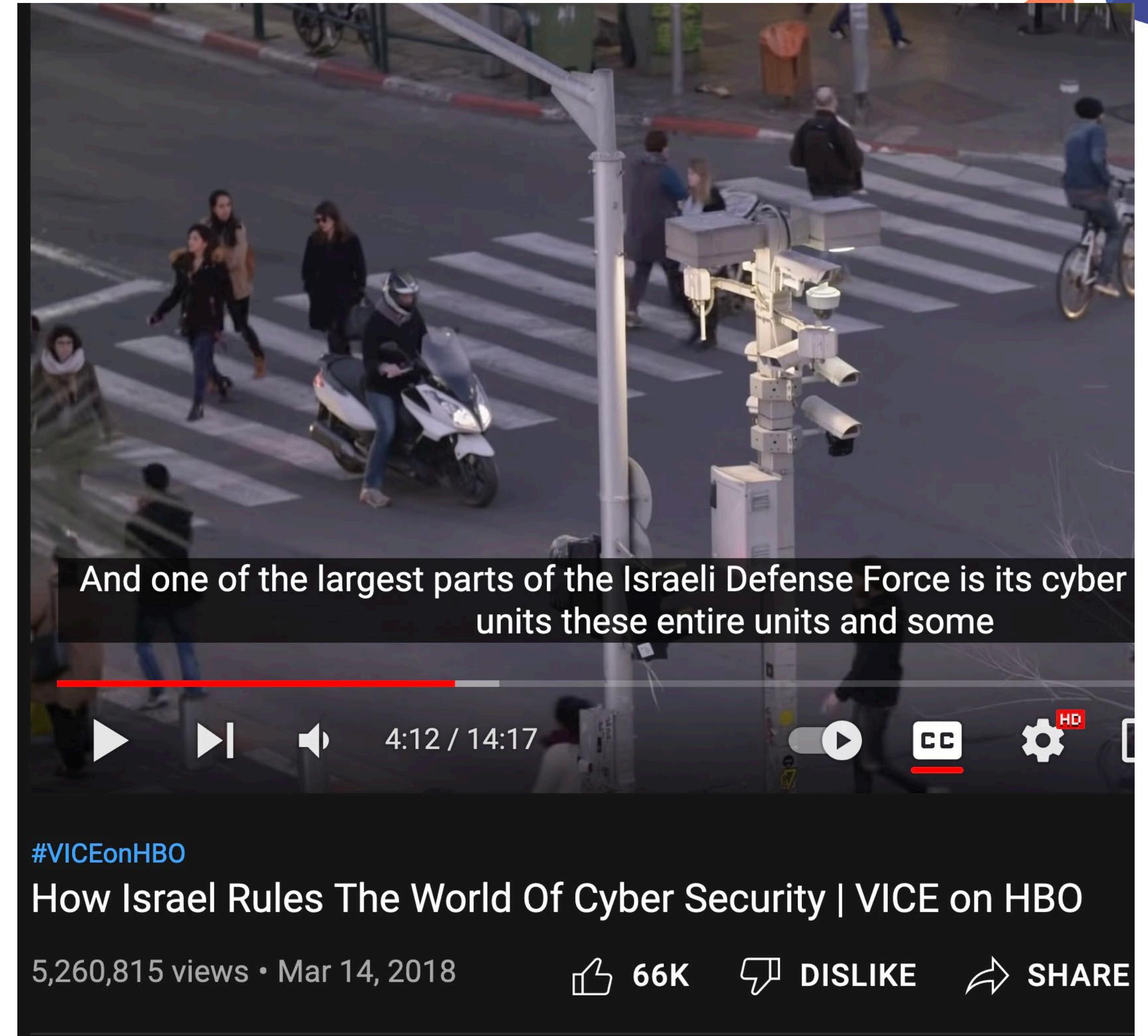
# Tutorial videos

- Targeted at beginners
- Hit or miss topics
- Research takes time
- Technical issues sink a production
- Can be seen as guides for criminals



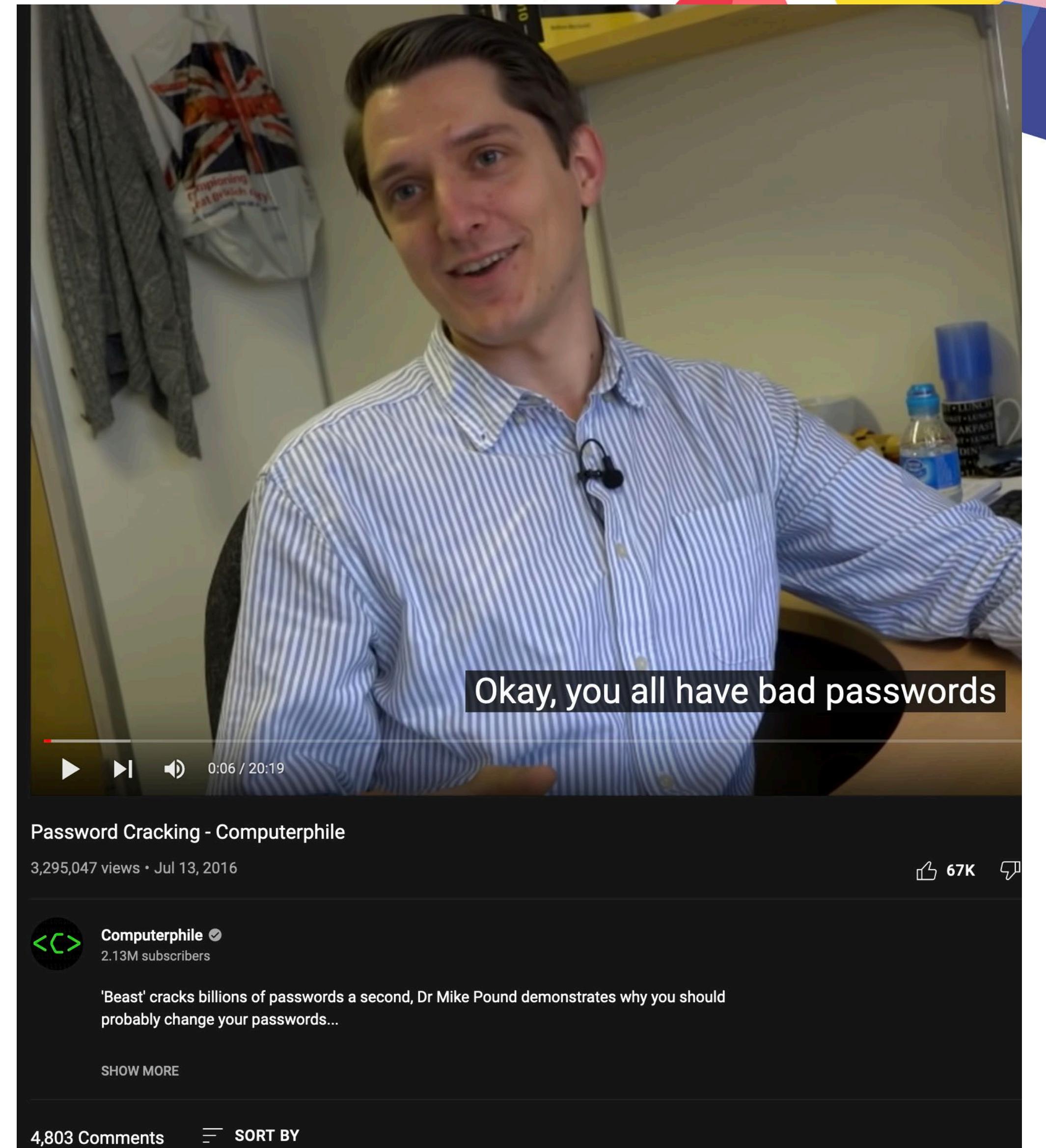
# News and documentaries

- Major events or industry news
- High budget, high production value
- Too risky for most non-news organizations
- Conflicts of interest from sponsors or brand involvement



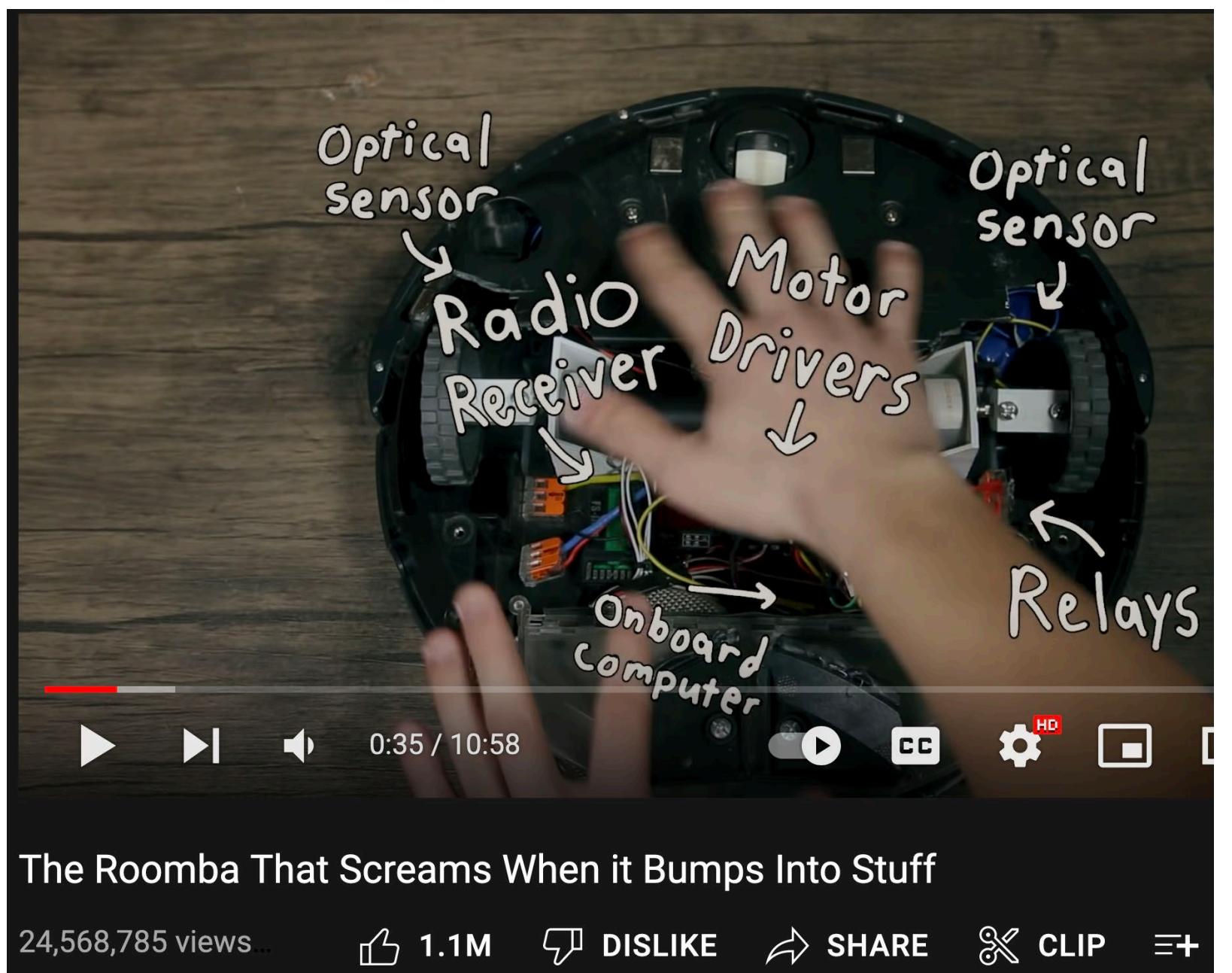
# Expert topic explainer

- Academics or experts explain concepts with visual aids
- High traffic beginner topics
- Relies on access to charismatic academics with free time
- Medium production quality
- Computerphile rules this category



# Project-based videos

- Document an interesting project
- Must be shocking, funny, or inspirational
- Medium production quality
- Tapping into trends pays off
- Requires technical skill and time
- Difficult to plan outcomes



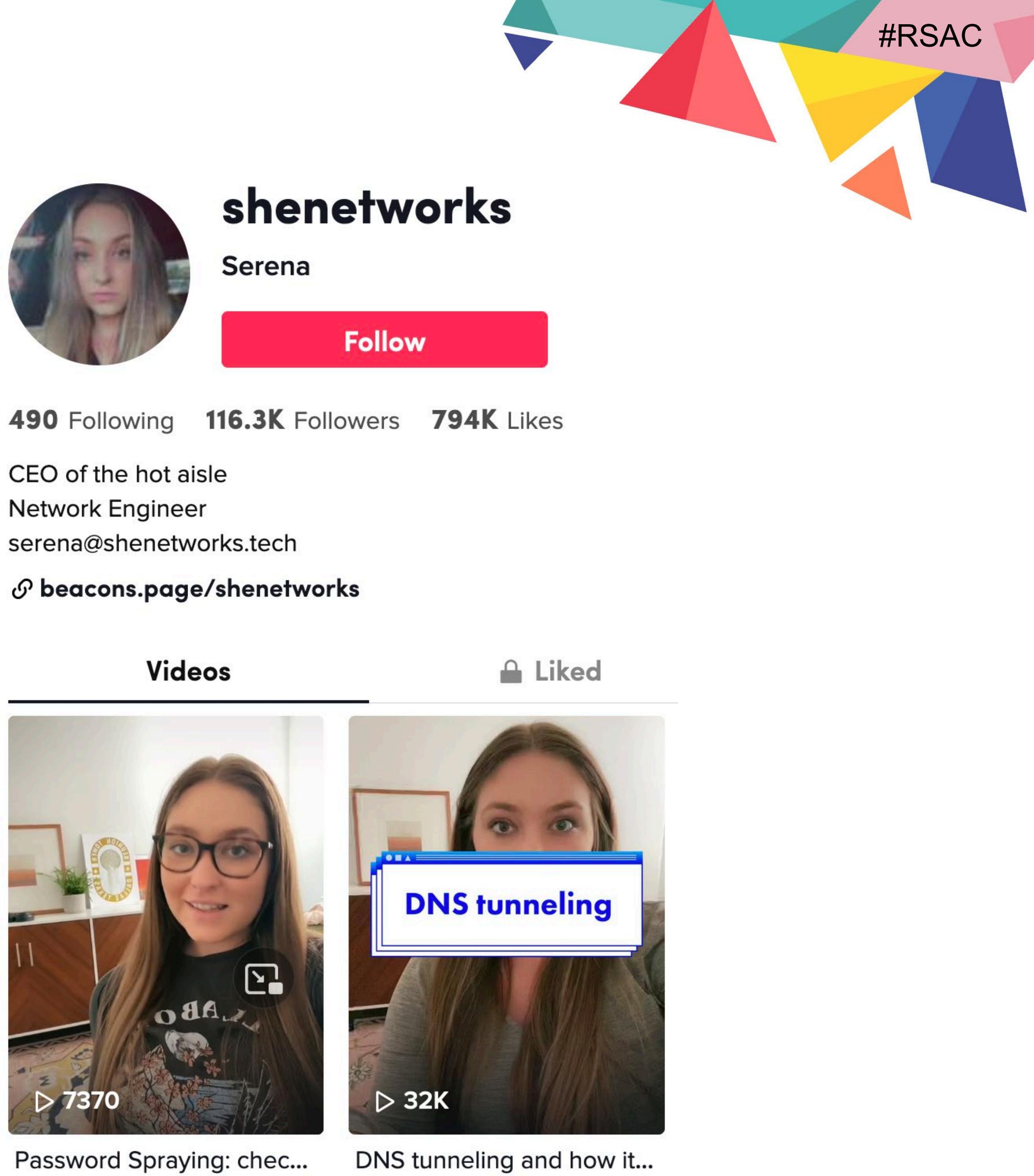
# MythBusters style

- Prove or disprove a popular belief
- Medium to high production quality
- Predictable format
- Some presenting skill required
- Difficult script creation
- Topics must be selected carefully



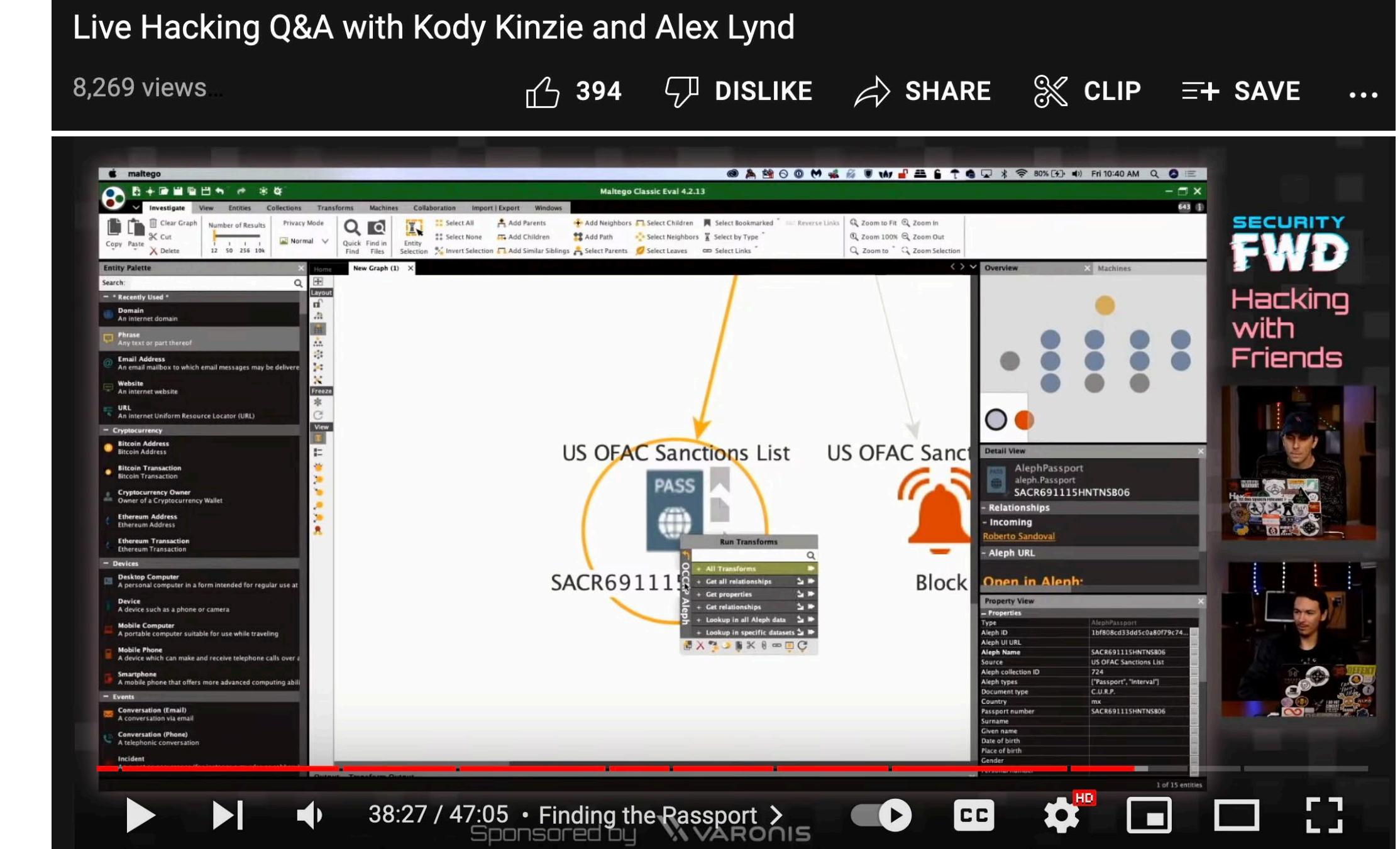
# TikTok and short-form content

- Easy to edit
- Low production quality
- Topics are hit and miss
- Negative comments
- Outright harassment
- Difficult to execute
- Hard to brand without ruining



# Livestreams

- Technical or entertainment stream
- Technical streams prone to failures
- Extreme technical burden
- Medium production investment
- Q&A streams are less popular
- 100% carried by hosts



RSA®Conference2022

# Creating Null Byte channel

36M+ views in four years with beginner tutorials

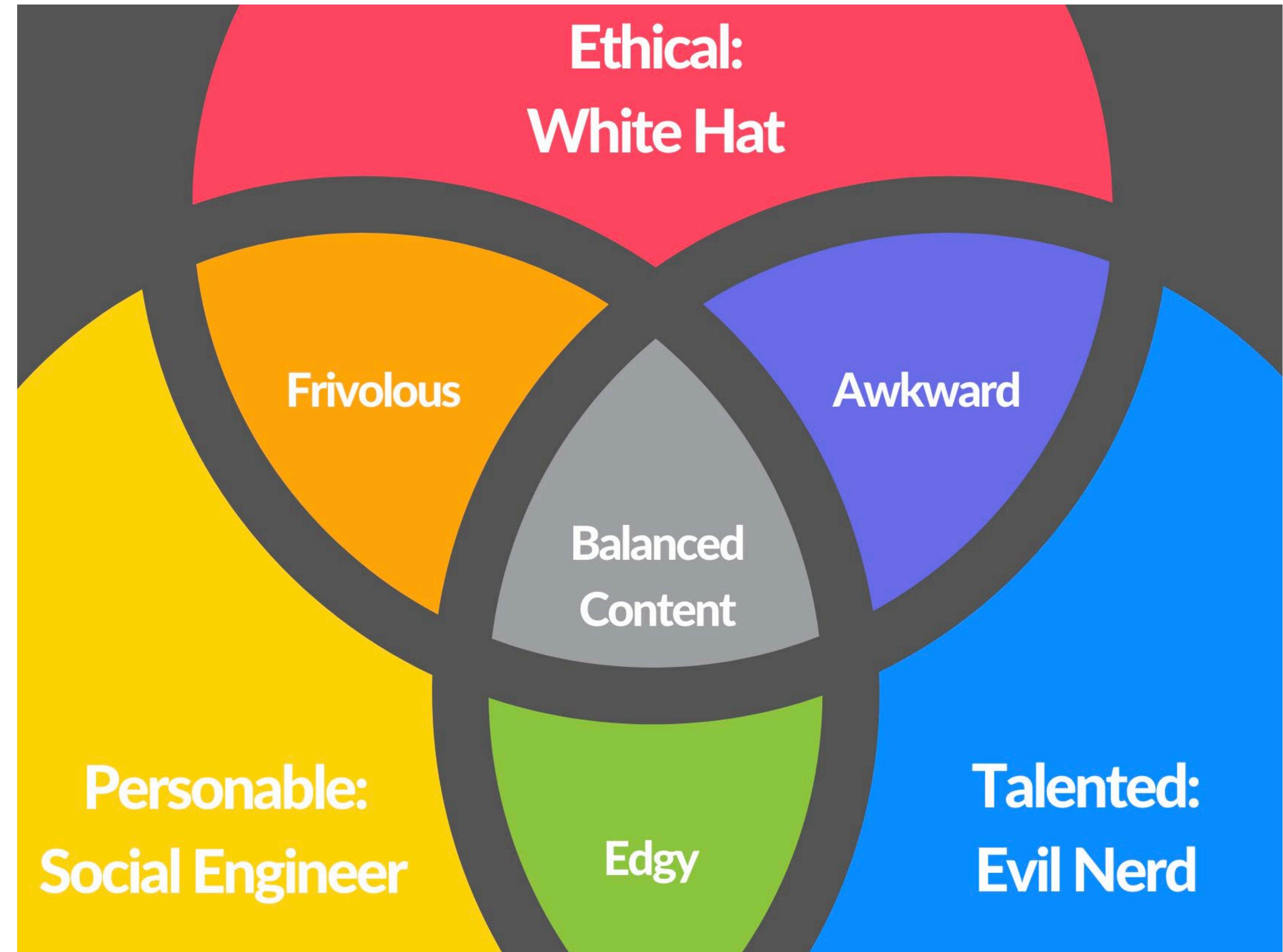


# Creating the channel

- Started as writer and editor at tutorial website Null Byte
  - Accidentally created YouTube channel by uploading a Defcon video while signed into work account
  - Asked management to make tutorial videos, was told no
  - “Too expensive and difficult”
  - Decided to do it anyway without pay



# Balance makes content feel natural



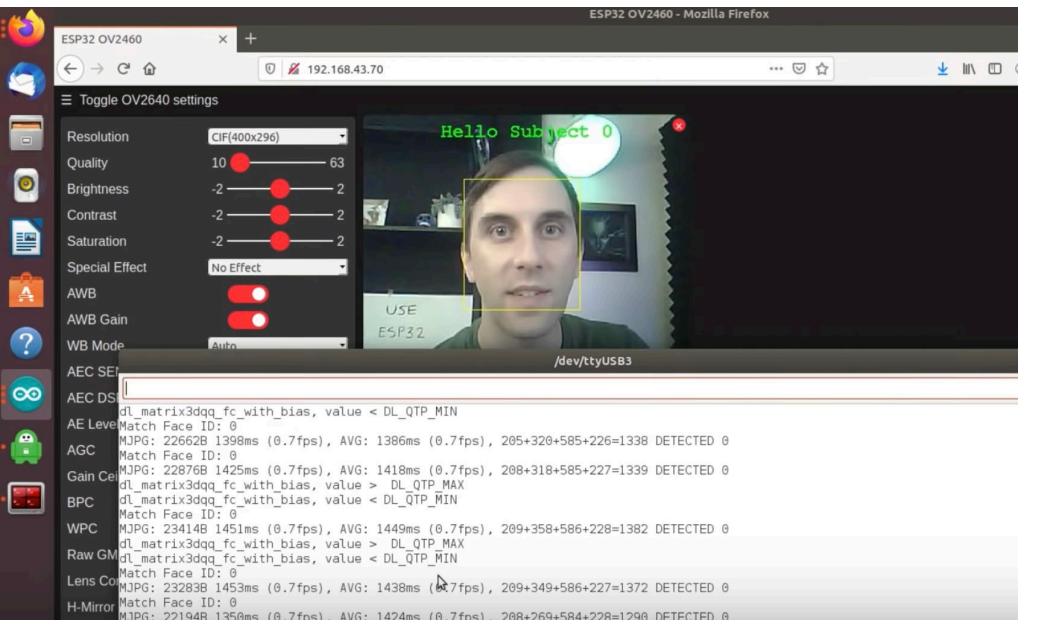
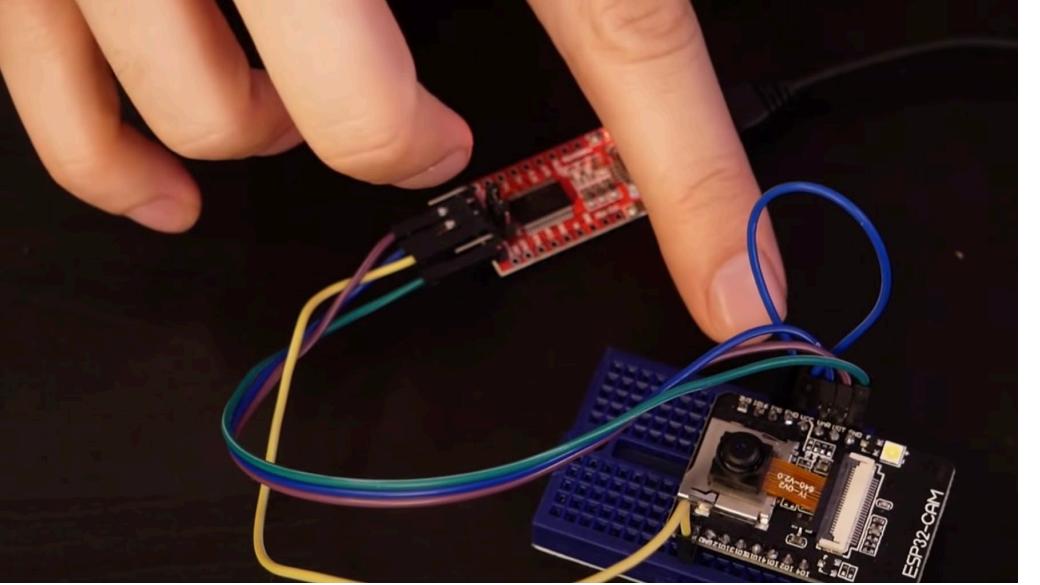
# The Null Byte format

- Only considered formats we could shoot 3x per day
- 10- to 15-minute length “Cyber Weapons Lab” episodes
- Beginner friendly topics broken into four pieces
- Inspired by Computerphile



# An episode in four segments

- “A” is a 15-second topic introduction
- “B” explains what we’re doing and why you need to follow along
- “C” is a screen-capture of the technical steps
- “D” is a wrap-up of the topic and where to find more information
- Order usually filmed: A, D, B, C



# The O.G.s

- Host: Kody Kinzie
- Producer: David Cazares, digital production major CSUN

## Second wave of talent

- Content contributor, editor: Nick Godshall
- Content contributor, project manager: Michael Raymond
- Editor: Eric Sanchez
- Content contributor: Alex Lynd

# Five months in: slow beginning

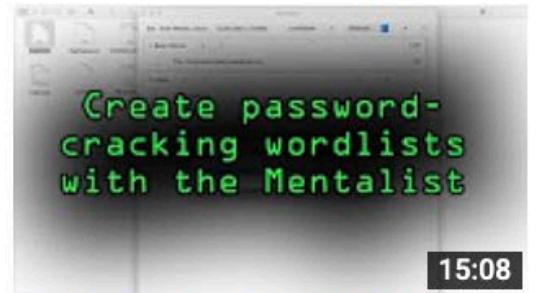
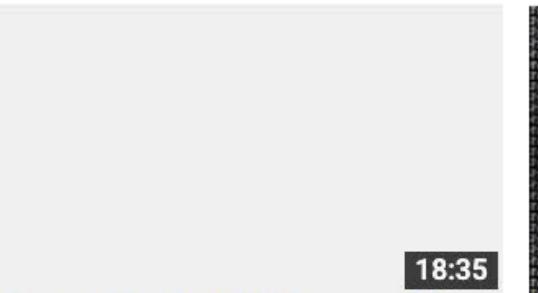
Null Byte

 Subscribe

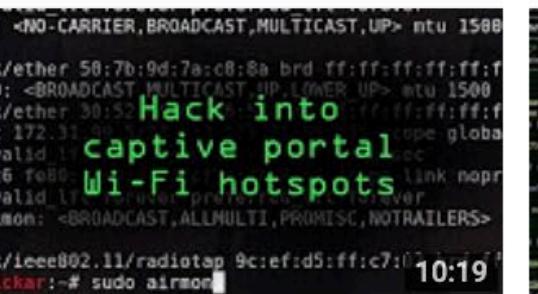
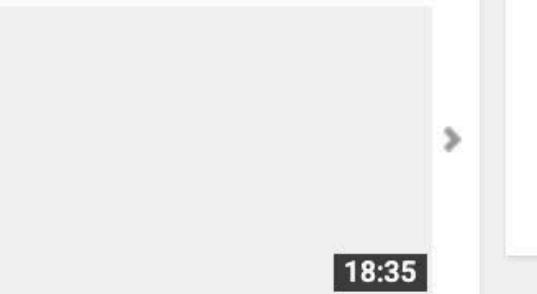
5,474

[Home](#) [Videos](#) [Playlists](#) [Channels](#) [Discussion](#) [About](#)


## Uploads

 Create Custom Wordlists for Password Cracking with the Mentalist 124 views • 2 hours ago	 How to Steal Wi-Fi Passwords with an Evil Twin Attack 3,014 views • 6 days ago	 How to Hunt Down & Crack WEP Wi-Fi Networks 1,133 views • 1 week ago	 Hack WPA and WPA2 networks with Airgeddon and WPS Pixie-Dust 5,711 views • 3 weeks ago	 Hack Hotel, Airplane & Coffee Shop Hotspots for Free Wi-Fi with Kismet 7,403 views • 1 month ago
---	--	---	---	---

## Popular uploads

 Hacking Wi-Fi in Seconds with Airgeddon & Parrot Security OS 58,471 views • 4 months ago	 Hack Hotel, Airplane & Coffee Shop Hotspots for Free Wi-Fi with Kismet 7,403 views • 1 month ago	 How to Use Kismet to Find & Monitor Nearby Wi-Fi Devices 4,397 views • 3 weeks ago	 Find and monitor nearby Wi-Fi devices 7,161 views • 1 month ago	 How to Steal Wi-Fi Passwords with an Evil Twin Attack 3,014 views • 6 days ago
--	---	--	---	--

## Related channels

 HackerSpoit <a href="#">Subscribe</a>
 Penetration Testing <a href="#">Subscribe</a>
 JackkTutorials <a href="#">Subscribe</a>
 Hak5 <a href="#">Subscribe</a>
 The Shadow Brokers <a href="#">Subscribe</a>
 SSTec Tutorials <a href="#">Subscribe</a>

- We started in November 2017

- By RSA April 2018, we had 5,000 subscribers with one hit episode
- We made 10 episodes: 8 paid \$250 and two free

# Year one: steady growth

Null Byte

[Subscribe](#) 169,700

[Home](#) [Videos](#) [Playlists](#) [Community](#) [Channels](#) [About](#)



## Uploads

9:38	13:53	14:01	10:20	
<a href="#">Discover &amp; Attack Almost Any Raspberry Pi on a Network with TDoS</a> ... 5,618 views • 3 days ago	<a href="#">Probe Sites for Vulnerabilities with TDoS, the Offensive Web Scanner</a> ... 6,630 views • 4 days ago	<a href="#">Steal User Credentials Stored in the Firefox Browser with a USB WiFi Adapter</a> ... 8,257 views • 1 week ago	<a href="#">Scan &amp; Attack Wi-Fi Networks with an ESP8266-Based WiFi Sniffer</a> ... 15,717 views • 1 week ago	<a href="#">Locate hosts on a network using ARP</a> ... 7,508 views • 1 week ago

## Popular uploads

15:34	23:46	10:19	21:16	10:32
<a href="#">Hacking Wi-Fi in Seconds with Airgeddon &amp; Parrot Security OS</a> ... 753,266 views • 1 year ago	<a href="#">Set Up an Ethical Hacking Kali Linux Kit on the Raspberry Pi 3 Model B+</a> ... 610,032 views • 1 year ago	<a href="#">Hack Hotel, Airplane &amp; Coffee Shop Hotspots for Free Wi-Fi with Kali Linux</a> ... 345,374 views • 1 year ago	<a href="#">The Top 10 Things to Do After Installing Kali Linux on Your Computer</a> ... 334,515 views • 5 months ago	<a href="#">How to Exploit a Router Using RouterSploit</a> ... 206,583 views • 10 months ago

## Related channels

	<a href="#">HackerSploit</a> <input checked="" type="checkbox"/>	<a href="#">Subscribe</a>
	<a href="#">Hak5</a> <input checked="" type="checkbox"/>	<a href="#">Subscribe</a>
	<a href="#">TechChip</a> <input checked="" type="checkbox"/>	<a href="#">Subscribe</a>
	<a href="#">LiveOverflow</a> <input checked="" type="checkbox"/>	<a href="#">Subscribe</a>
	<a href="#">Seytonic</a>	<a href="#">Subscribe</a>
	<a href="#">Tech Raj</a> <input checked="" type="checkbox"/>	<a href="#">Subscribe</a>

- Our first video hit 750K views in April 2019
- The channel grew to 169K subscribers

# Year two: big numbers

Null Byte

Subscribe

501K

The screenshot shows the YouTube channel page for "Null Byte". The top navigation bar includes links for Home, Videos, Playlists, Community, Channels, and About, along with a search icon. The channel has 501K subscribers. Below the navigation, a section titled "Cyber Weapons Lab" is described as a place where Kody from Null Byte and other members highlight cool tools, equipment, and methods of pentesting and hacking. Five video thumbnails are displayed, each with a title, duration, and view count:

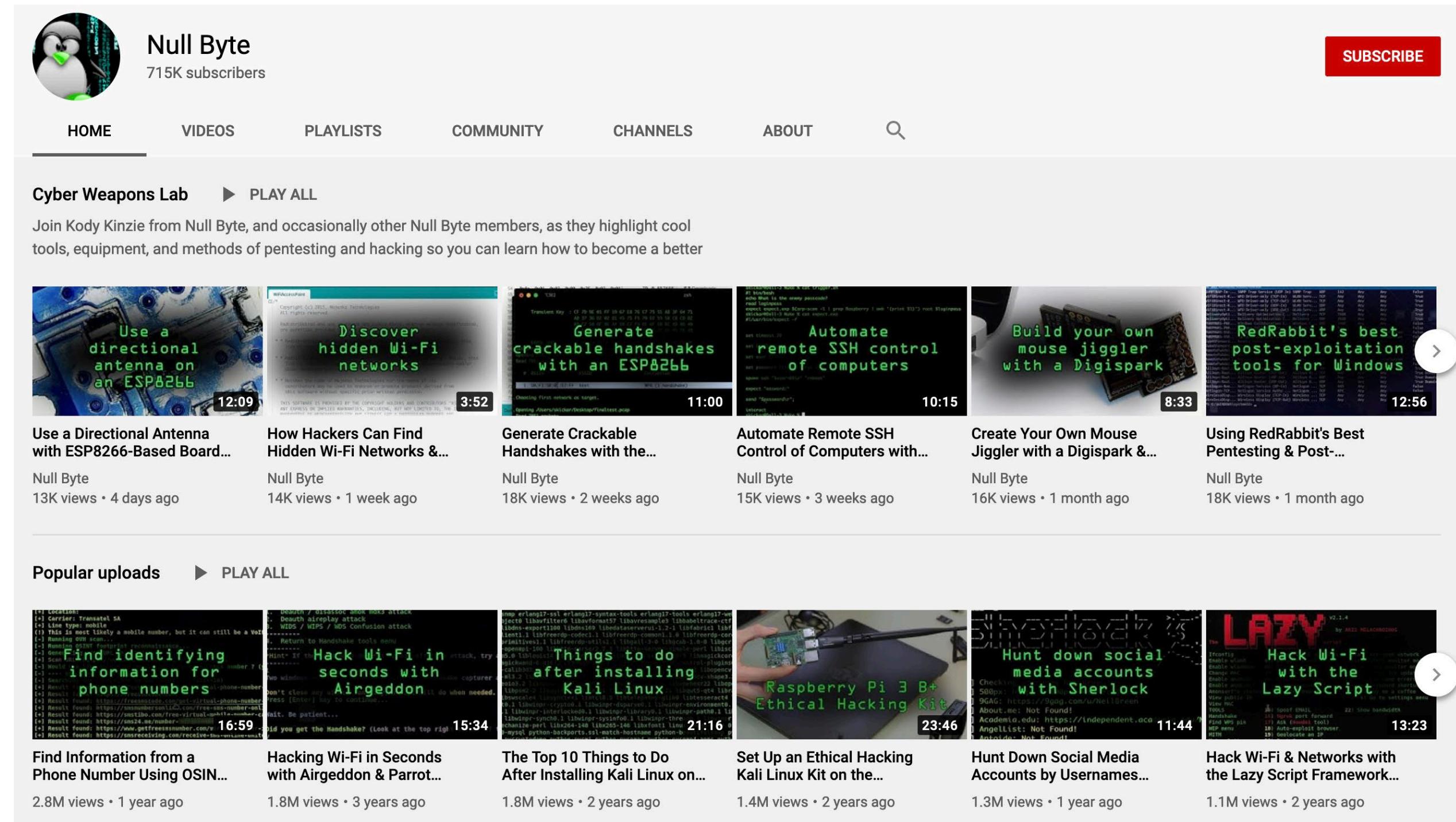
- Spoof Wi-Fi geolocation hotspots** (7:11) - Null Byte, 9,060 views • 2 days ago
- Hunt down unknown Wi-Fi devices** (12:25) - Null Byte, 11,443 views • 1 week ago
- How Hackers Can Attack 5 GHz Wi-Fi Networks with a Wi-Fi Directional Antenna & Wireshark...** (3:35) - Null Byte, 19,934 views • 1 week ago
- Clean & Map Wigle Wardriving Data in Jupyter Notebook** (16:42) - Null Byte, 9,725 views • 2 weeks ago
- Pick a Wi-Fi antenna for WiFi hacking** (15:15) - Null Byte, 28,292 views • 2 weeks ago
- Bypass VPNs to track with Grabify** (15:39) - Null Byte, 12,727 views • 3 weeks ago

Below this, a "Popular uploads" section shows five more videos:

- Hacking Wi-Fi in Seconds with Airgeddon & Parrot Security OS ...** (15:34) - Null Byte, 1,550,566 views • 2 years ago
- Find Information from a Phone Number Using OSINT Tools** (16:59) - Null Byte, 1,429,386 views • 10 months ago
- Set Up an Ethical Hacking Kali Linux Kit on the Raspberry Pi 3 ...** (23:46) - Null Byte, 1,170,871 views • 2 years ago
- The Top 10 Things to Do After Installing Kali Linux on Your ...** (21:16) - Null Byte, 1,131,443 views • 1 year ago
- Hunt down social media accounts with Sherlock** (11:44) - Null Byte, 722,161 views • 9 months ago
- Google dork like a pro hacker** (13:37) - Null Byte, 616,188 views • 5 months ago

- By April 2020, our first video had 1.5 million views
- The channel hit 500K subscribers

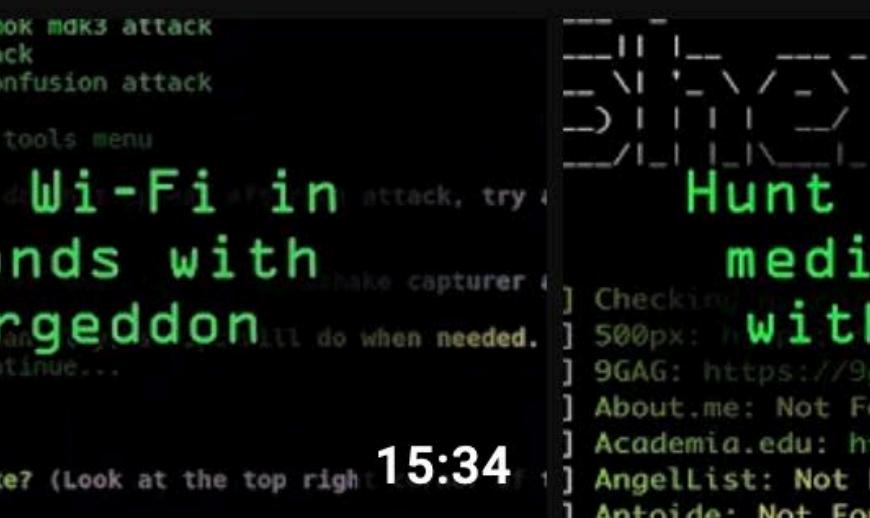
# Year three: pandemic kills Null Byte



- In April 2021, we had 715K subscribers
- Null Byte parent company stopped ordering episodes
- Moving to rural Montana made uploading difficult

# Best episodes

- 17,000,000 views (population of the Netherlands)

 <p><b>Find Information from a Phone Number Using OSIN...</b></p> <p>16:59 • 21:16</p>	 <p><b>The Top 10 Things to Do After Installing Kali Linux on...</b></p> <p>21:16 • 15:34</p>	 <p><b>Hacking Wi-Fi in Seconds with Airgeddon &amp; Parrot...</b></p> <p>2M views • 4 years ago</p>	 <p><b>Hunt Down Social Media Accounts by Usernames...</b></p> <p>1.7M views • 2 years ago</p>	 <p><b>Raspberry Pi 3 B+ Ethical Hacking Kit</b></p> <p>23:46</p>
<p>Find Information from a Phone Number Using OSIN...</p> <p>3.8M views • 2 years ago</p>	<p>The Top 10 Things to Do After Installing Kali Linux on...</p> <p>2.2M views • 3 years ago</p>	<p>Hacking Wi-Fi in Seconds with Airgeddon &amp; Parrot...</p> <p>2M views • 4 years ago</p>	<p>Hunt Down Social Media Accounts by Usernames...</p> <p>1.7M views • 2 years ago</p>	<p>Set Up an Ethical Hacking Kali Linux Kit on the...</p> <p>1.6M views • 4 years ago</p>
 <p><b>Find Vulnerable Services &amp; Hidden Info Using Google...</b></p> <p>13:37</p>	 <p><b>Hack Wi-Fi &amp; Networks with the Lazy Script Framework...</b></p> <p>13:23</p>	 <p><b>Automate Wi-Fi Hacking with Wifite2 in Kali Linux [Tutorial]</b></p> <p>10:22</p>	 <p><b>Track &amp; Connect to Smartphones with a Beacon...</b></p> <p>1M views • 3 years ago</p>	 <p><b>Run Kali on an unrooted Android device</b></p> <p>25:22 • 12:37</p>
<p>Find Vulnerable Services &amp; Hidden Info Using Google...</p> <p>1.5M views • 2 years ago</p>	<p>Hack Wi-Fi &amp; Networks with the Lazy Script Framework...</p> <p>1.3M views • 3 years ago</p>	<p>Automate Wi-Fi Hacking with Wifite2 in Kali Linux [Tutorial]</p> <p>1.2M views • 3 years ago</p>	<p>Track &amp; Connect to Smartphones with a Beacon...</p> <p>1M views • 3 years ago</p>	<p>Run the Kali Linux Hacking OS on an Unrooted Android...</p> <p>786K views • 3 years ago</p>

# Worst episodes

- 173,000 views (population of Lancaster, California)

The following table summarizes the details of each video thumbnail shown in the collage:

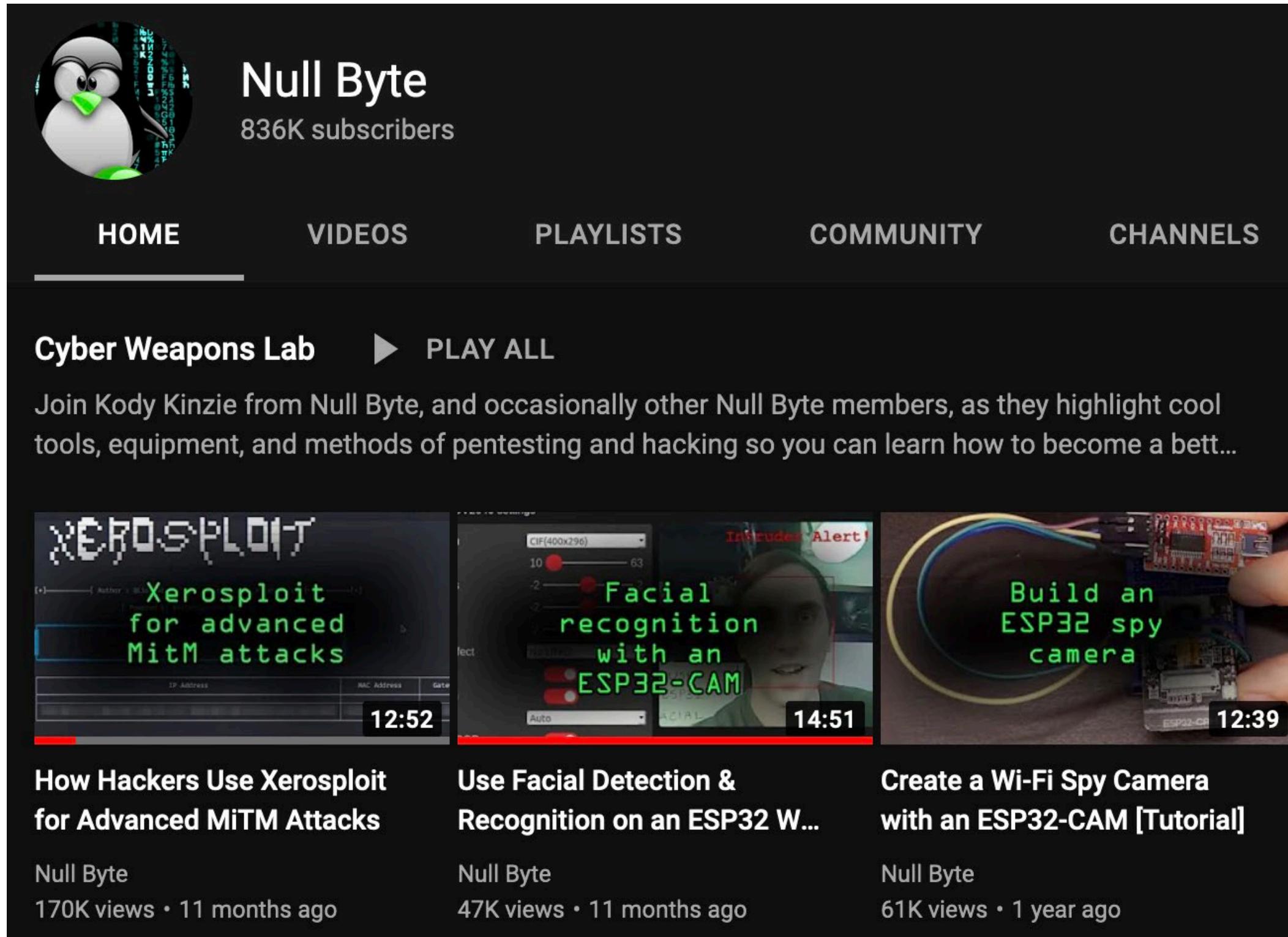
Thumbnail Image	Title	Published At	Views	Last Updated
	Access multiple Wi-Fi adapters with Airserv-ng	10:50	20K	2 years ago
	Use images to smuggle data past firewalls	10:32	20K	1 year ago
	Defend your Mac from malware & evil maid attacks	12:58	20K	2 years ago
	How hackers attack Raspberry Pis on a network	3:25	19K	2 years ago
	Generate one-liners with ease	7:57	19K	1 year ago
	Use One-Lin3r to Quickly Generate Reverse Shells, Ru...		19K	1 year ago
	Generate obfuscated payloads with Graffiti	8:19	19K	1 year ago
	How a Hacker Could Create a Trojan PDF for Macs Using...	4:29	19K	2 years ago
	Encrypt your Private Text, Photo & Archive Files with...	11:20	19K	3 years ago
	Create Rogue APs with MicroPython on an ESP826...	12:34	19K	2 years ago
	Use IPv4 to navigate a network	12:03	19K	3 years ago

# How to ruin a good idea

- Read off slides
- Awkward banter
- Inconsistent content
- Bad audio quality
- Long episodes
- Multi-part series
- Untested code
- Irrelevant brand sponsors

# Where is Null Byte today?

- Aging, out-of-date content
- Parent company trying to sell
- Two serious offers but no deals
- Could vanish at any time

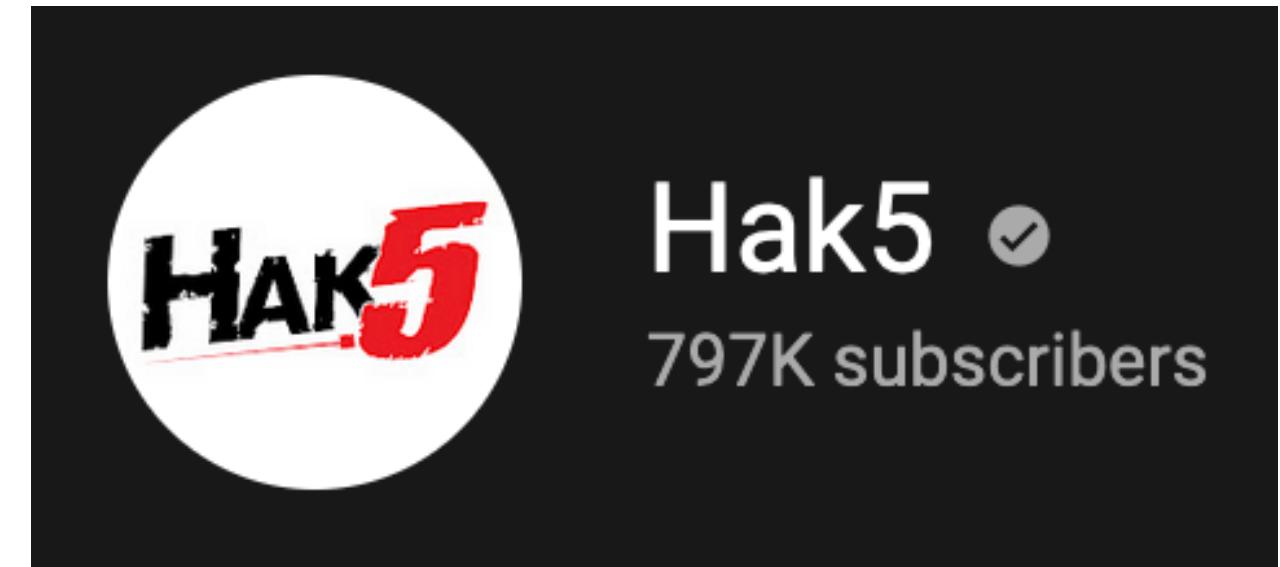


# Hak5: what's better than a tutorial?

**Going beyond tutorial content**



# Null Byte crew joins Hak5 as Retia team



- Hak5 is a YouTube channel created in 2005 by Darren Kitchen
- Hosts several unique shows
- Cold-emailed Darren asking to meet at RSA 2019
- Agreed to create a new show on Hak5: Retia

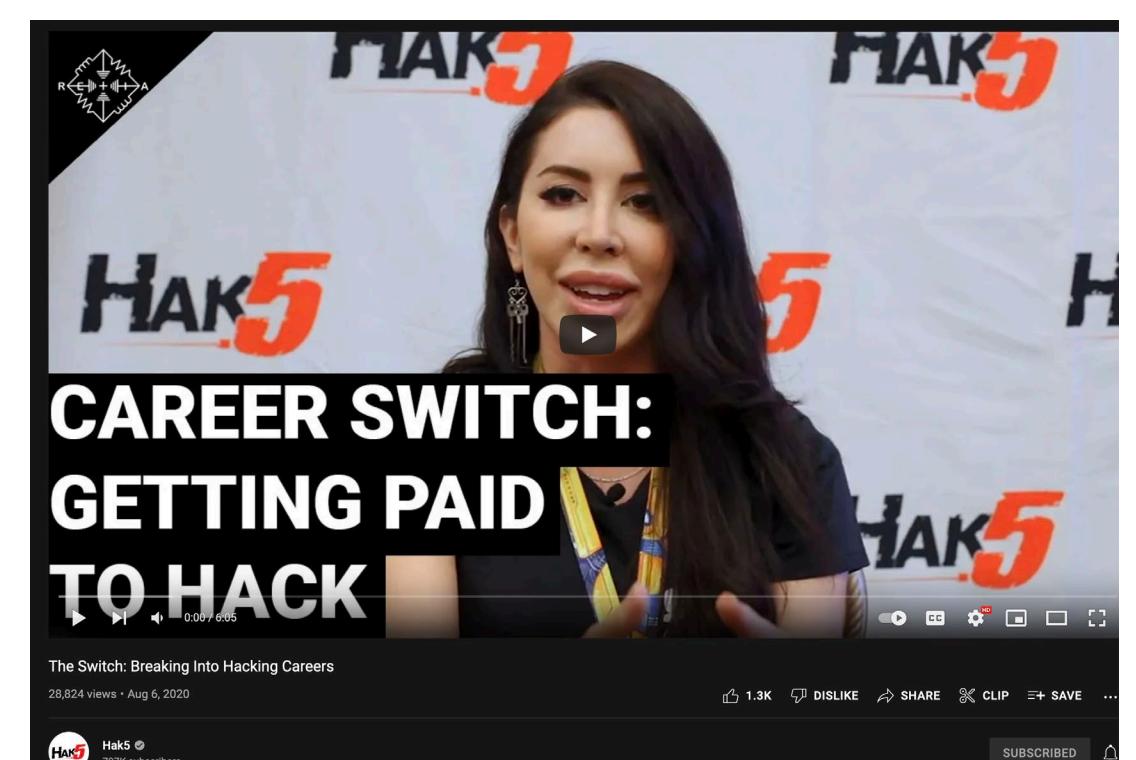
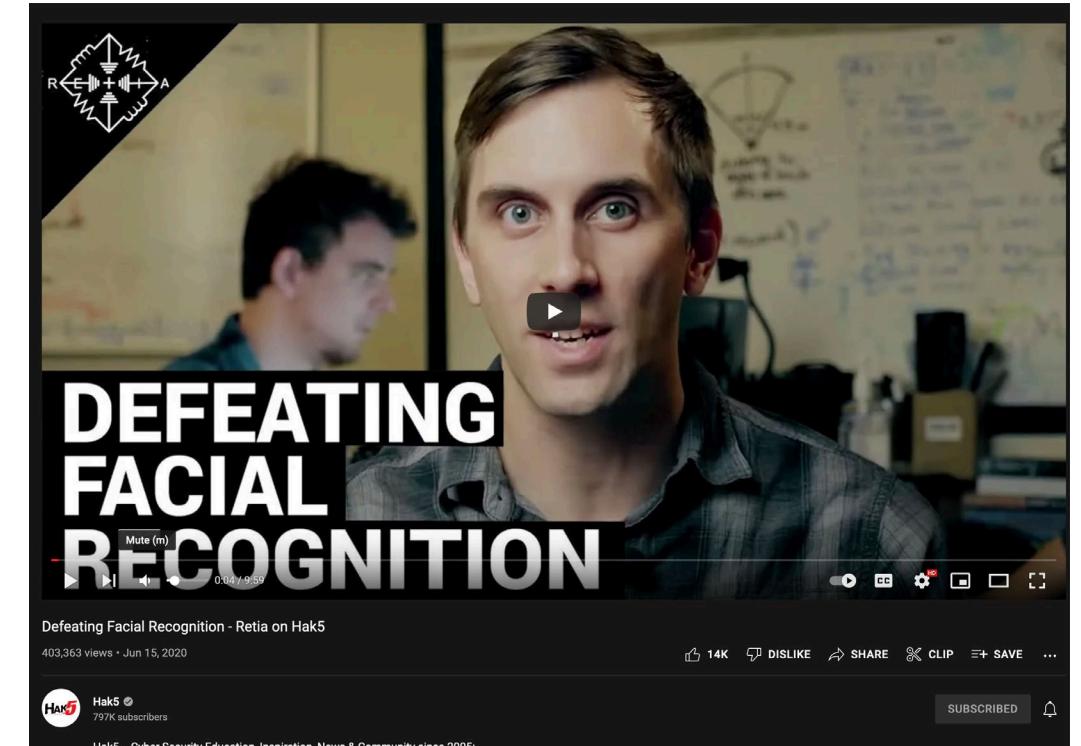
# MythBusters inspiration

- MythBusters excels at teaching science to people who don't care
- Format can be applied to cybersecurity



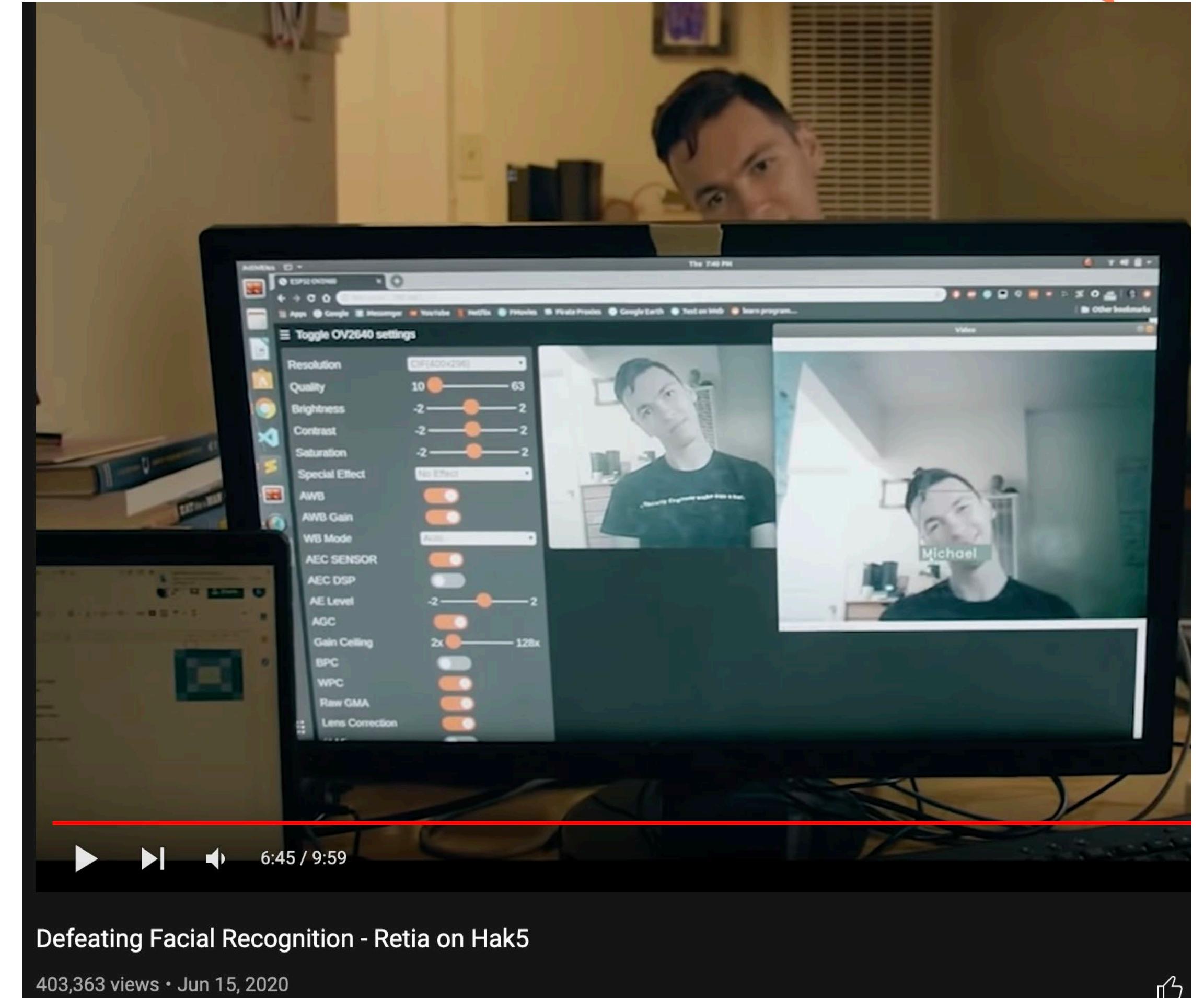
# New episodes focus on:

- Testing a hacking myth or misconception
- Exploring tools hackers use
- Exploring part of hacker subculture



# Flagship episode: "Defeating Facial Recognition"

- Tested which techniques work against facial recognition
- One week of pre-production, research, and scripting
- Makeup artist, three days of filming
- Highest production value ever



# What does a good YouTube video look like?



## Impressions and how they led to watch time

Data available May 6, 2021 – Apr 7, 2022 (337 days)

Impressions  
**9.5M**

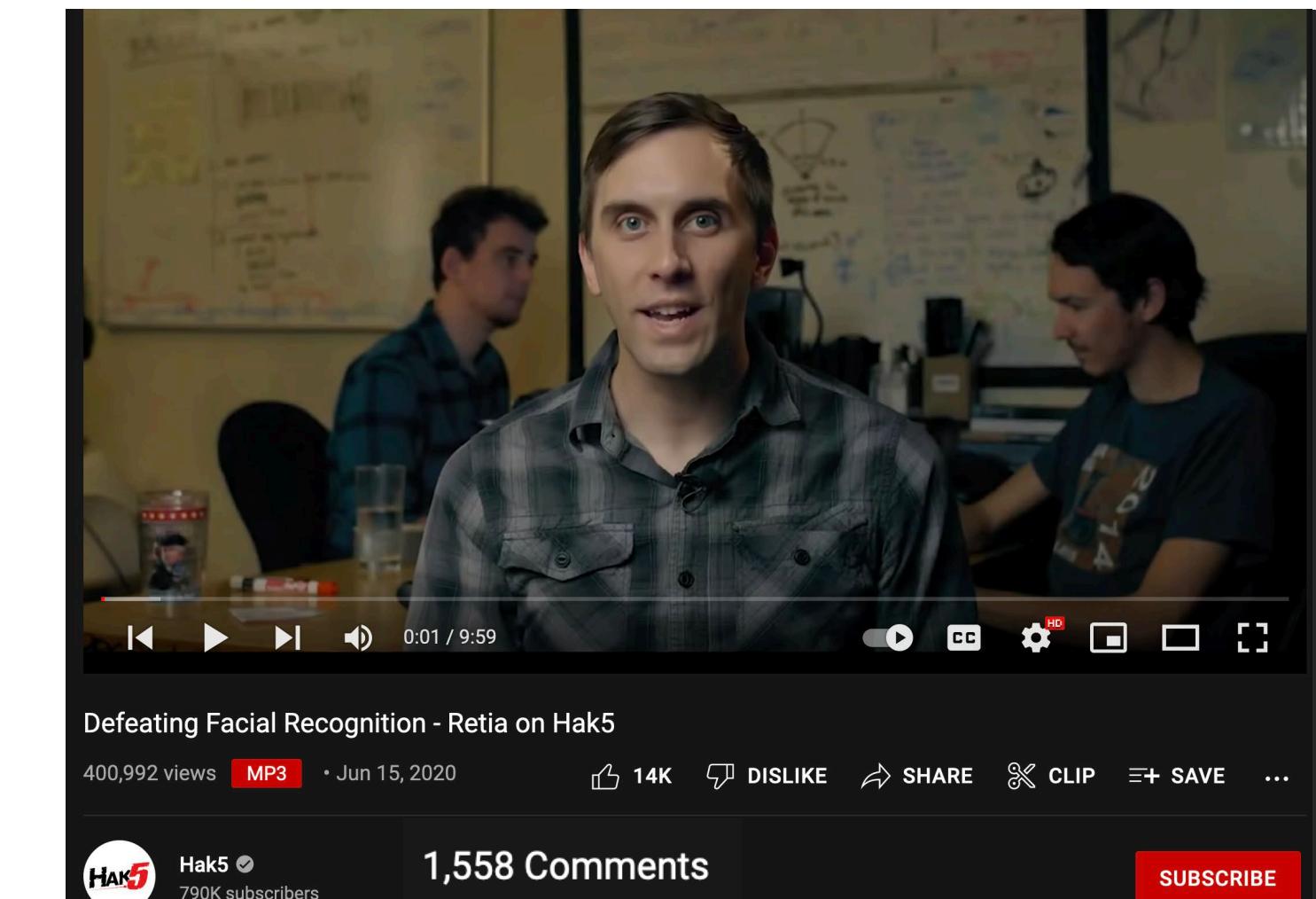
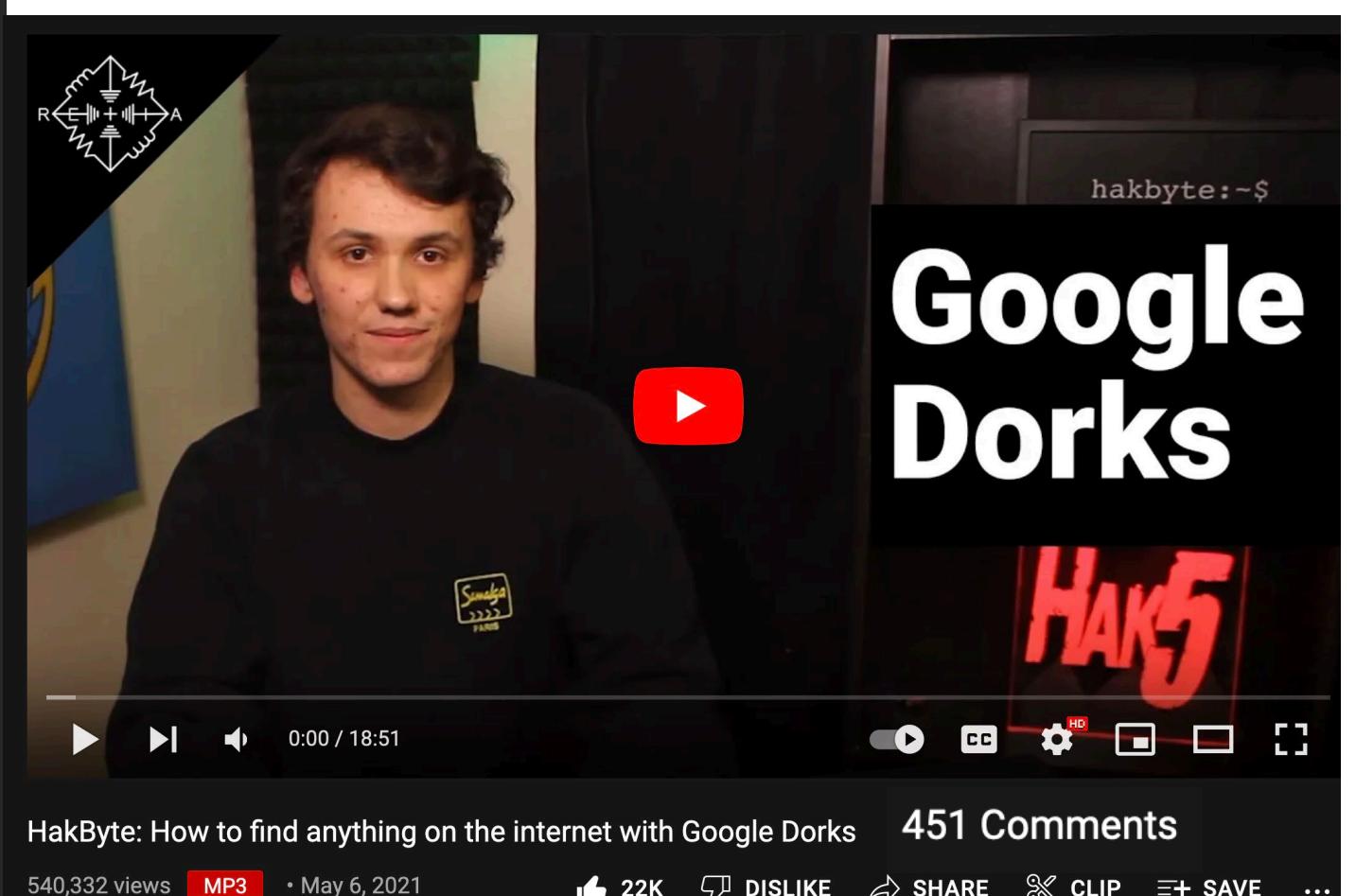
92.3% from YouTube recommending your content ⓘ

3.6% click-through rate

Views from impressions  
**340.4K**

6:31 average view duration

Watch time from impressions (hour...  
**37.0K**



## Impressions and how they led to watch time ▲

Data available Jun 15, 2020 – Apr 8, 2022 (663 days)

Impressions  
**4.3M**

87.2% from YouTube recommending your content ⓘ

4.6% click-through rate

Views from impressions  
**195.7K**

5:31 average view duration

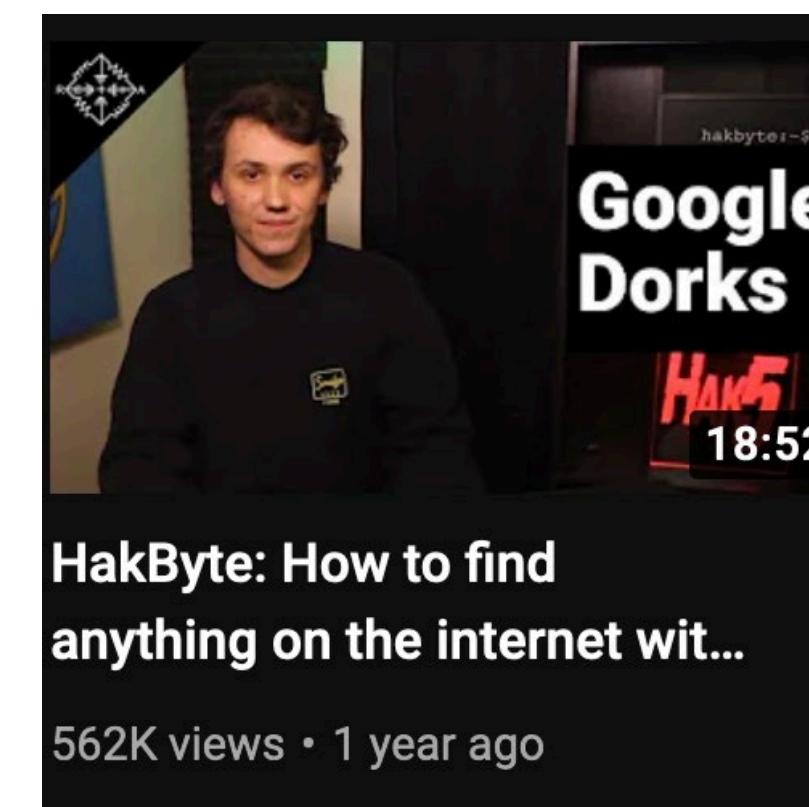
Watch time from impressions (hour...  
**18.0K**

# Top episodes in a year

- Livestreams



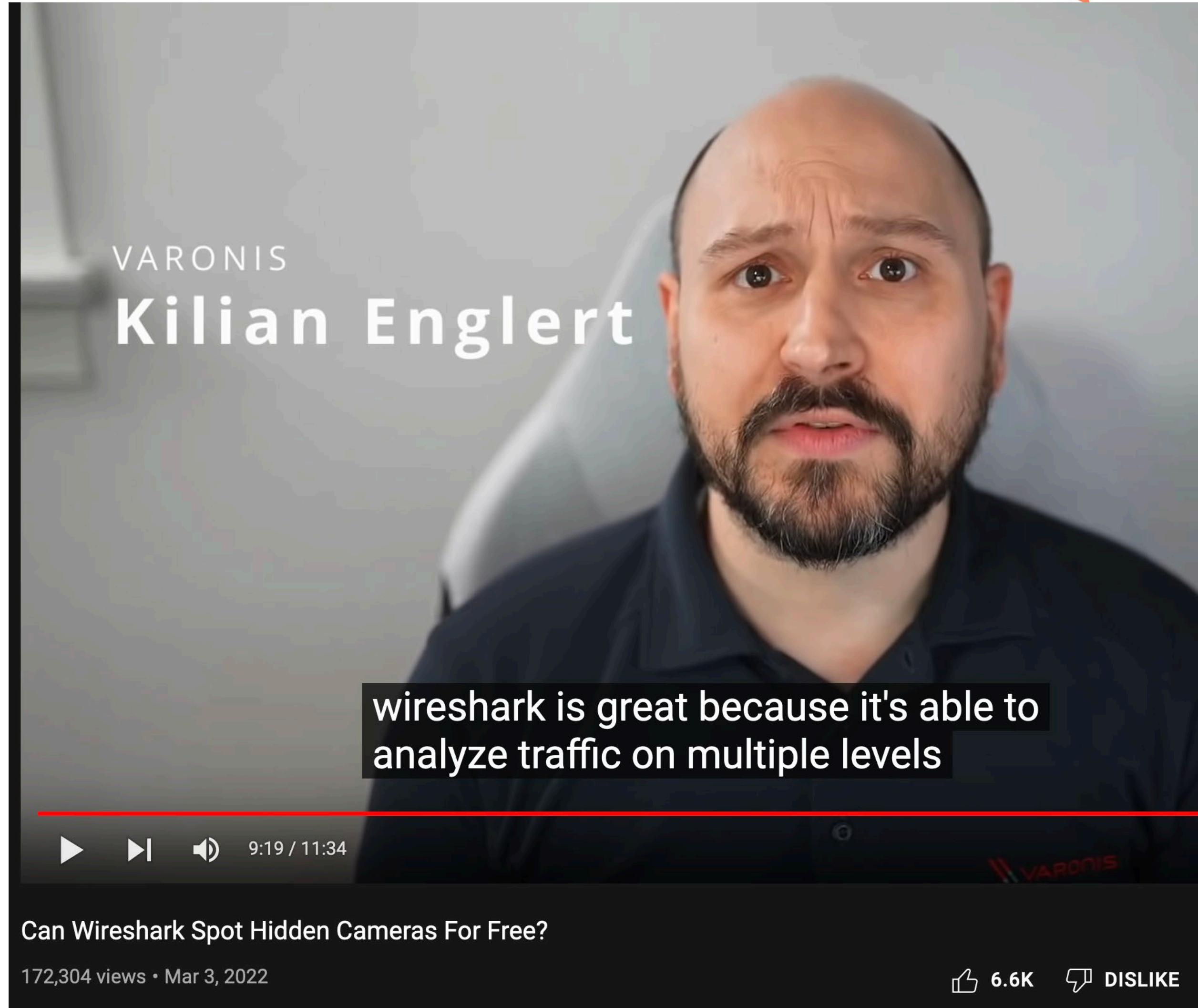
- MythBusters style



- Tutorial

# How to add sponsors

- Sponsors must add value without being intrusive
- We tapped inside talent for expert interviews
- Expert insights keep the episode unbiased



**RSA®**Conference2022

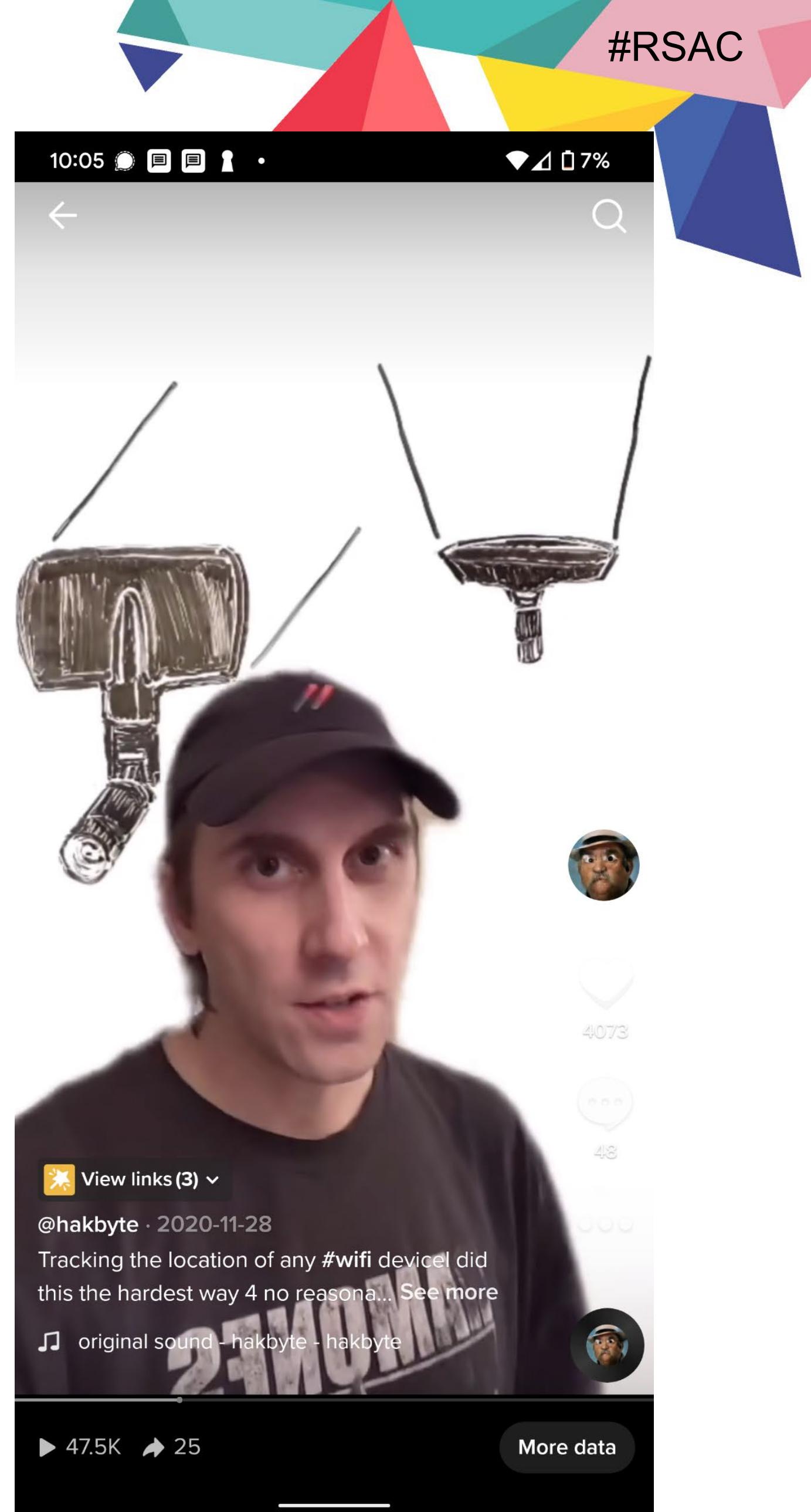
# TikTok cybersecurity entertainment

## The Wild West of cybersecurity content



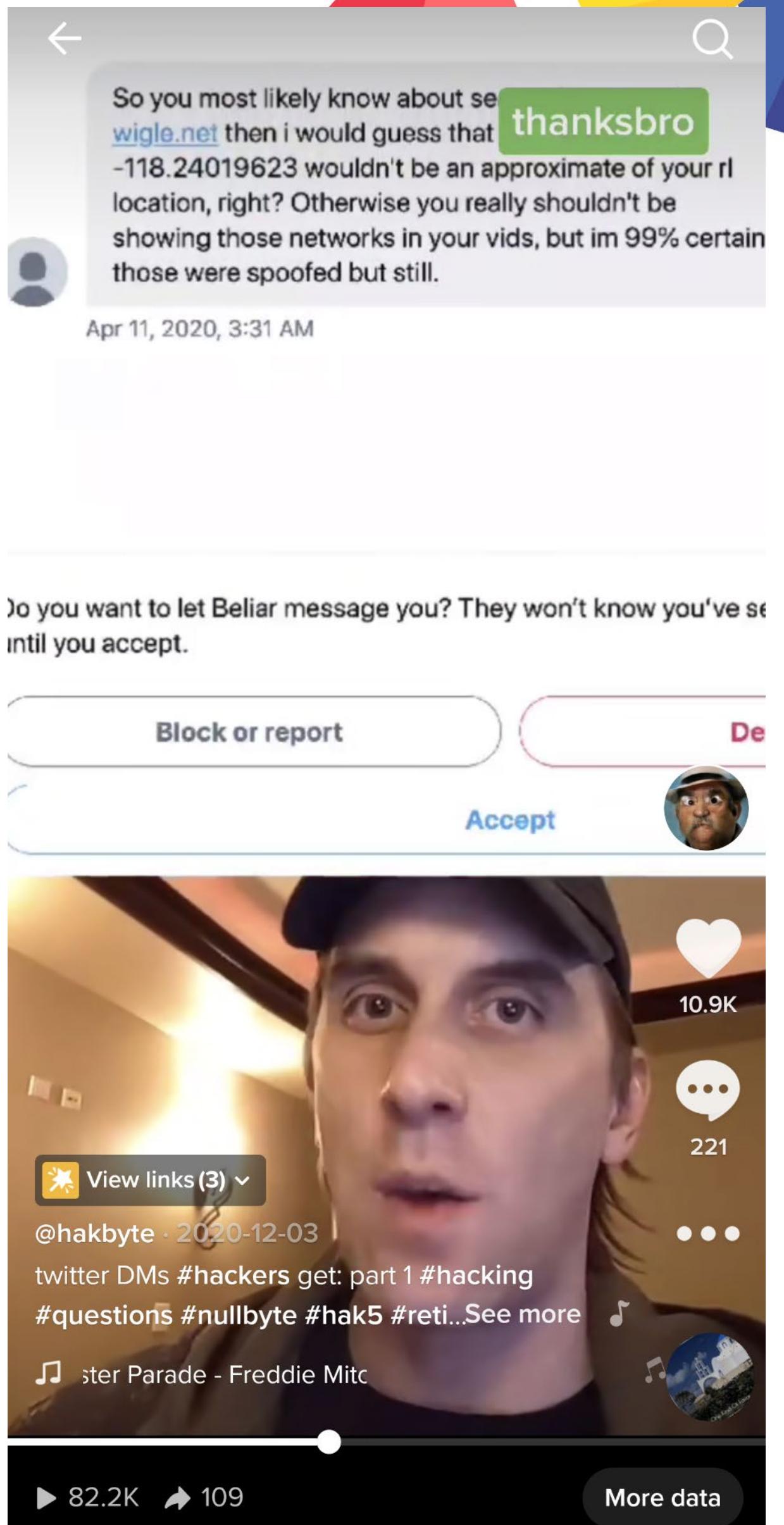
# Hunting down Wi-Fi devices

- In 2020, I posted my first TikTok video
- Finding Wi-Fi devices by signal strength
- 47K views, 4K likes over several months
- Used whiteboard for illustrations
- Had to edit twice because my phone died



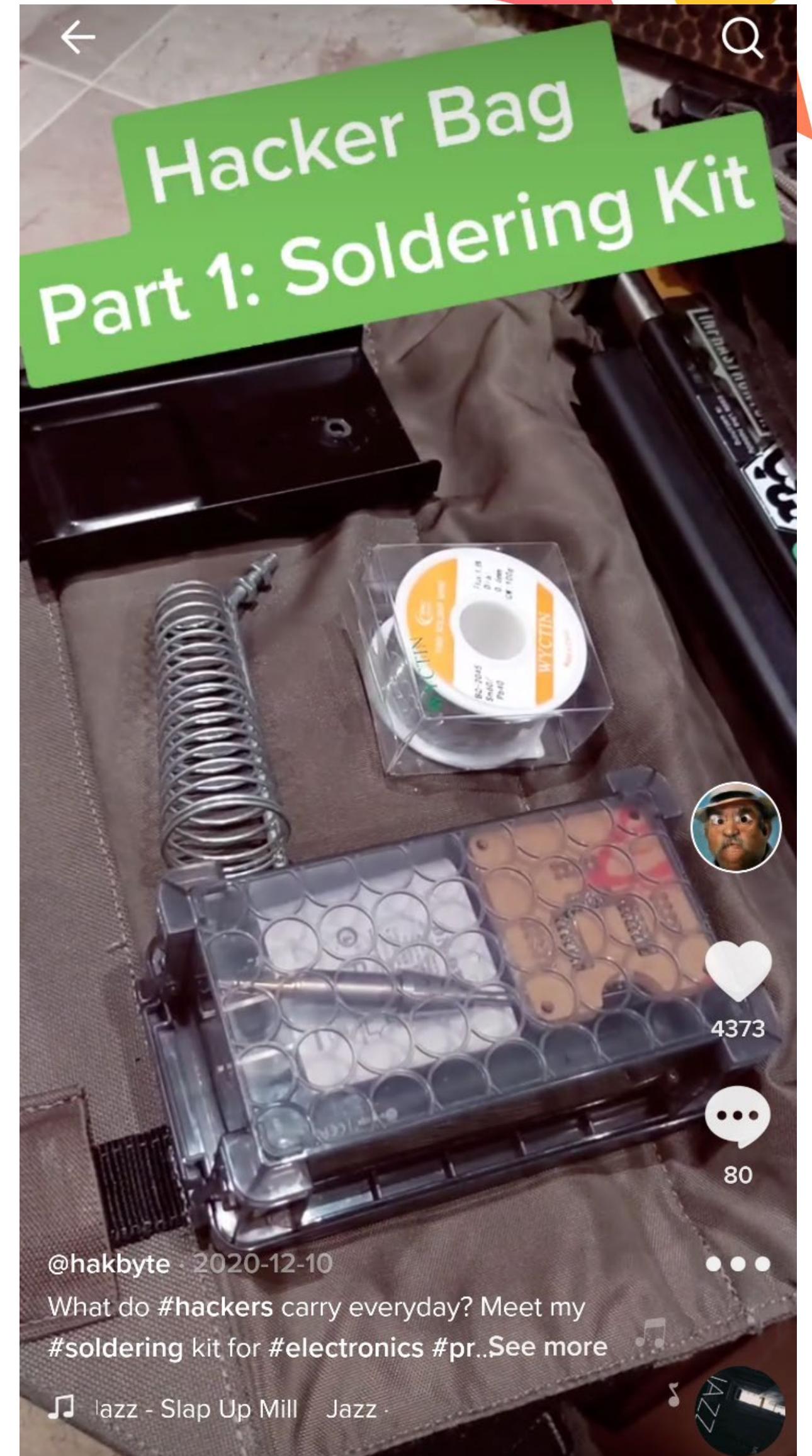
# Twitter messages hackers receive

- Series responding to DMs I receive on Twitter from hosting Null Byte
- Picked the strangest questions
- 82K views and 10K likes
- Had to edit twice because my phone died
- Second episode taken down for harassment and bullying



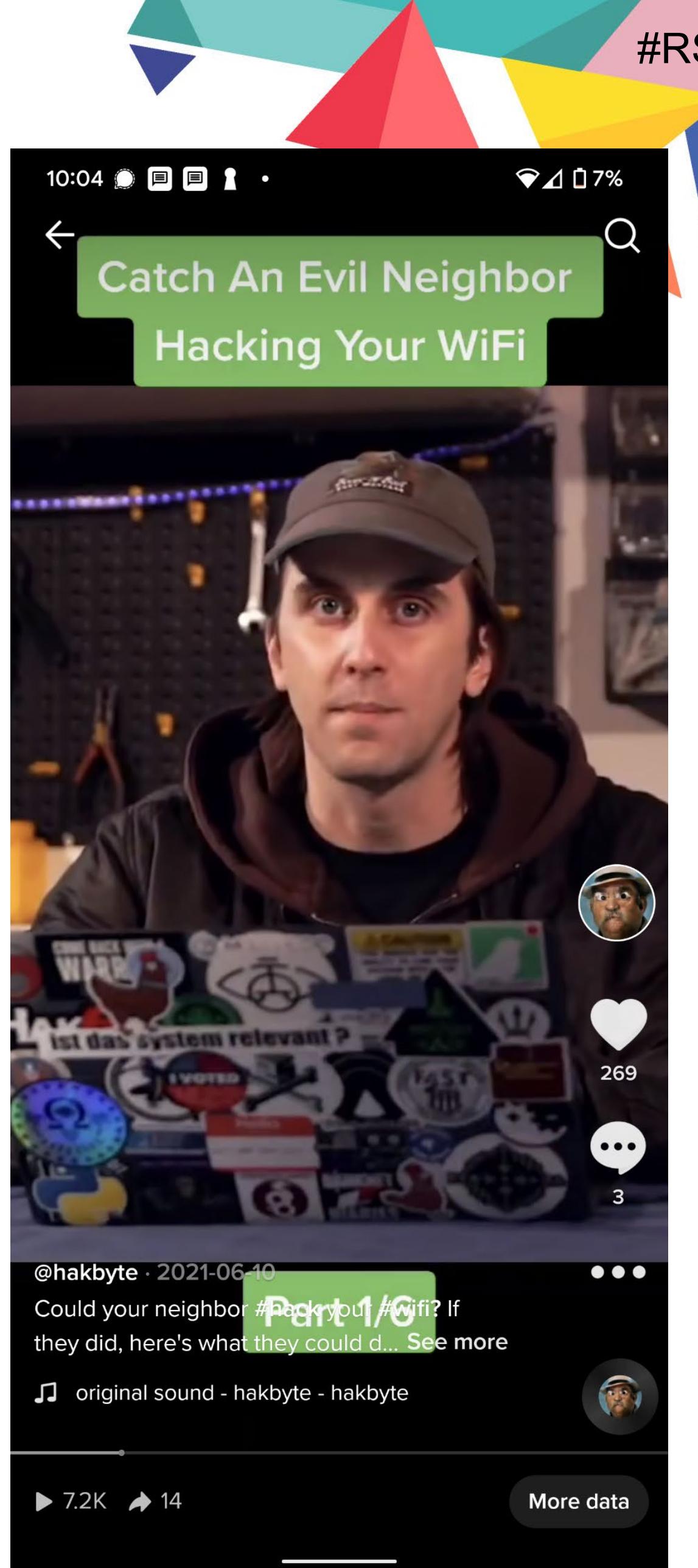
# “What’s in a Hacker’s Bag?”

- Episode on common items hackers carry
- Focused on an electronics soldering kit
- 37K views and 4K likes
- Not taken down for harassment
- Started using adobe Rush to edit
- Only edited one time



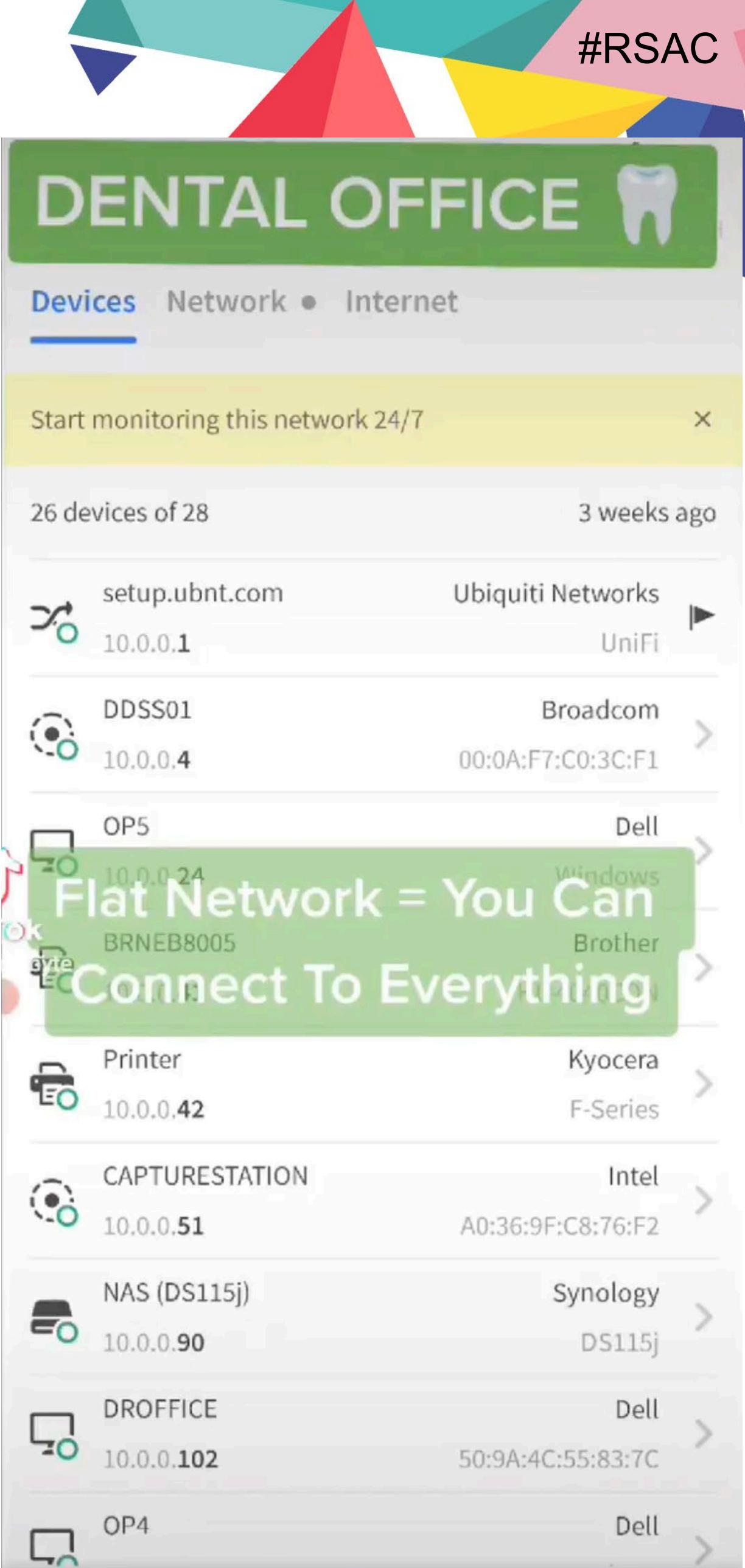
# “Detect Someone Hacking your Wi-Fi”

- Tried recycling Hak5 content into small pieces
- 7K views and 272 likes
- Taken down for harassment and bullying
- Reinstated five days later
- Not much of an impact



# “How I’d Hack My Dentist”

- Series pointing out flaws in everyday businesses and how they could be exploited
- First case was a nonspecific dental office
- Played it safe; no clearly identifying information
- Showed what a flat network looks like
- Explained attackers could access internal devices



# Immediate takedown

- Taken down for harassment and bullying (of an anonymous dental office) within eight hours
- After the initial takedown, content permanently removed
- Also flagged as “illegal activities and regulated goods” for good measure



!

**Content can't be restored**

It was determined that your content violates applicable laws and cannot be restored.



content violation

Illegal activities and regulated goods

We prohibit the trade, sale, promotion, and use of certain regulated goods, as well as the depiction or promotion of criminal activities. Some content may be removed if it relates to activities or goods that are illegal or regulated in the majority of the region or world, even if the activities or goods in question are legal in the jurisdiction of posting. We allow exceptions for content that provides value to the public, such as educational, scientific, artistic, and newsworthy content. [See Community Guidelines](#).

Harassment and bullying

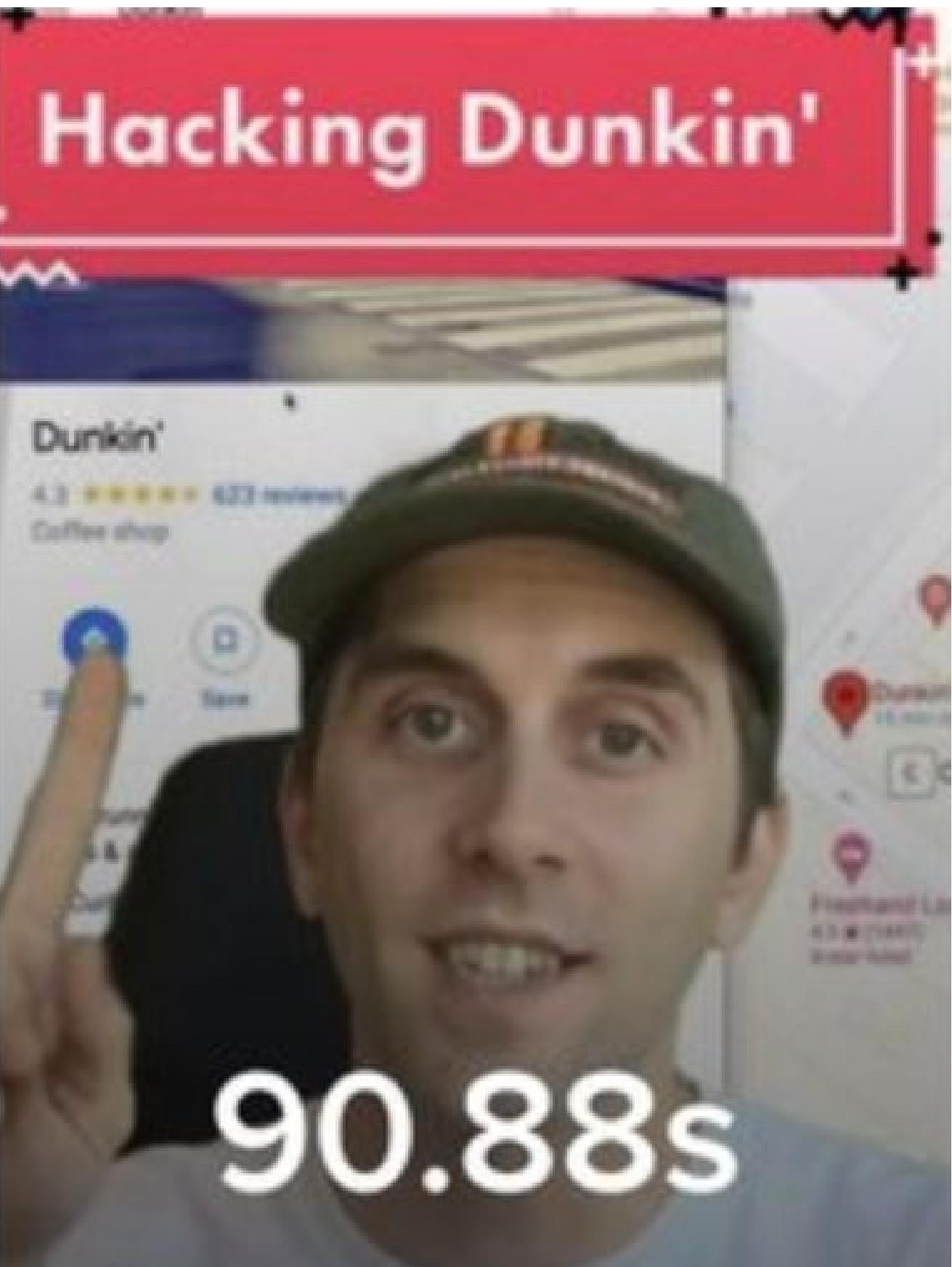
Users should feel safe to express themselves without fear of being shamed, humiliated, bullied, or harassed. We deeply understand the psychological distress that abusive content can have on individuals, and we do not tolerate abusive content or behavior on our platform. [See](#)

Did this resolve your issue?



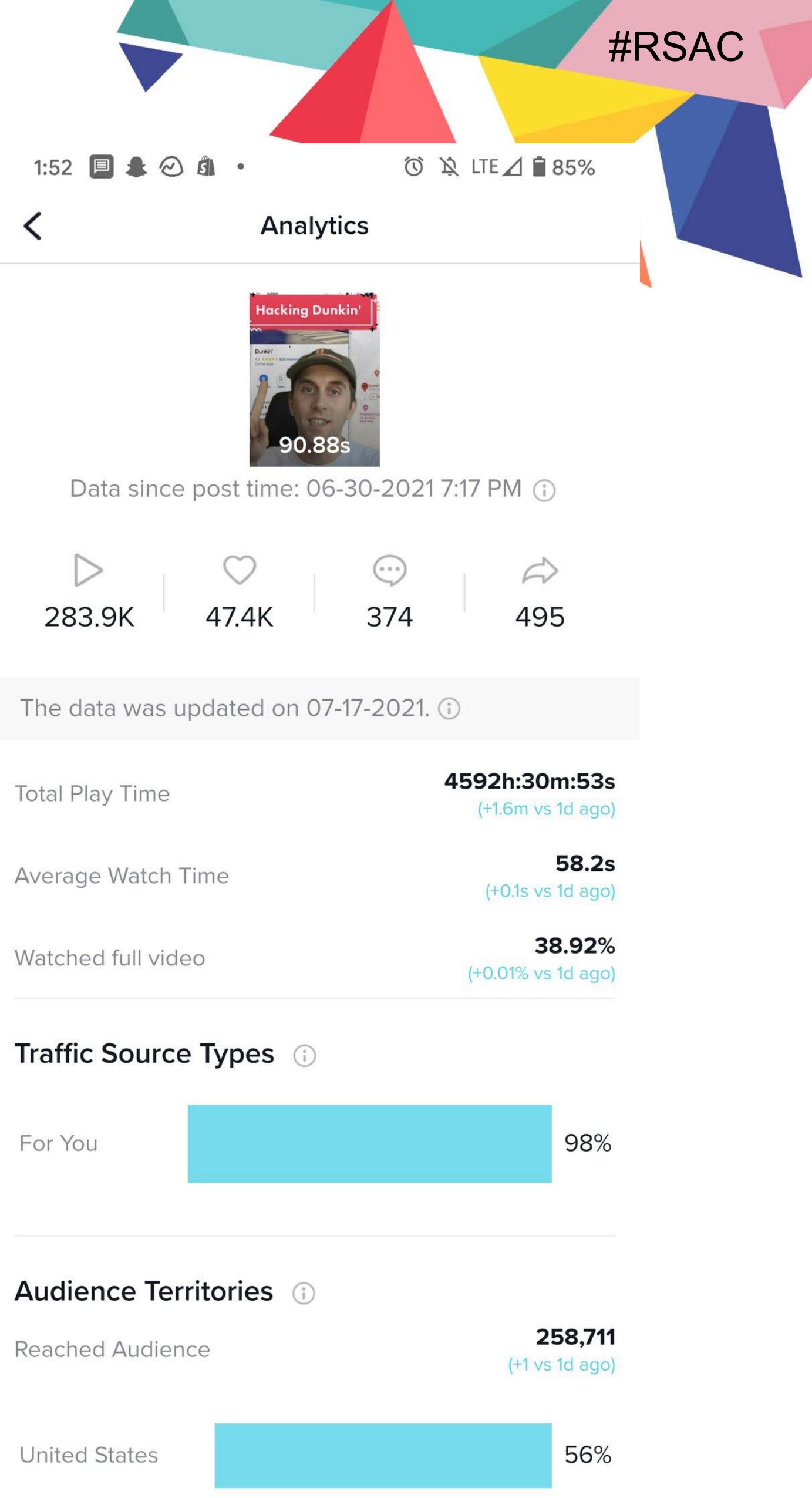
# “Hacking Dunkin”

- I chose to gamble on the next episode
- Used a specific instead of anonymized business
- Released episode on an LA donut store with publicly viewable security cameras
- Pointed out attackers could see employee areas
- Reported to store in 2018; issue was fixed by 2020



# Timeline of a viral TikTok video

- Posted at 4 a.m. after editing all night
- Woke up to hundreds of notifications
- Featured on "For You" page
- Flooded with thousands of new subscribers
- Call from work that a man wants me fired for making a video about how to hack a "McDonald's"



# Takedown after one week

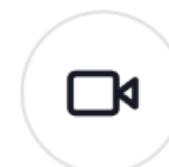
- Edgy video got 4,592 hours of watch time
- I was ruled to have bullied a donut shop
- Someone called my work furious over this
- Playing it safe got me 96 hours of watch time and was taken down faster
- I needed a break



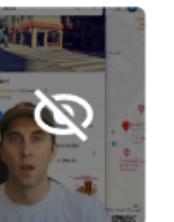
Content can't be restored

It was determined that your content violates our Community Guidelines and cannot be restored.

## Video details



"How I'd hack this coffee shop to spy on everyone #hakbyte #hak5 #nullbyte #tubitaughtme"  
Posted on 06-30 at 18:17

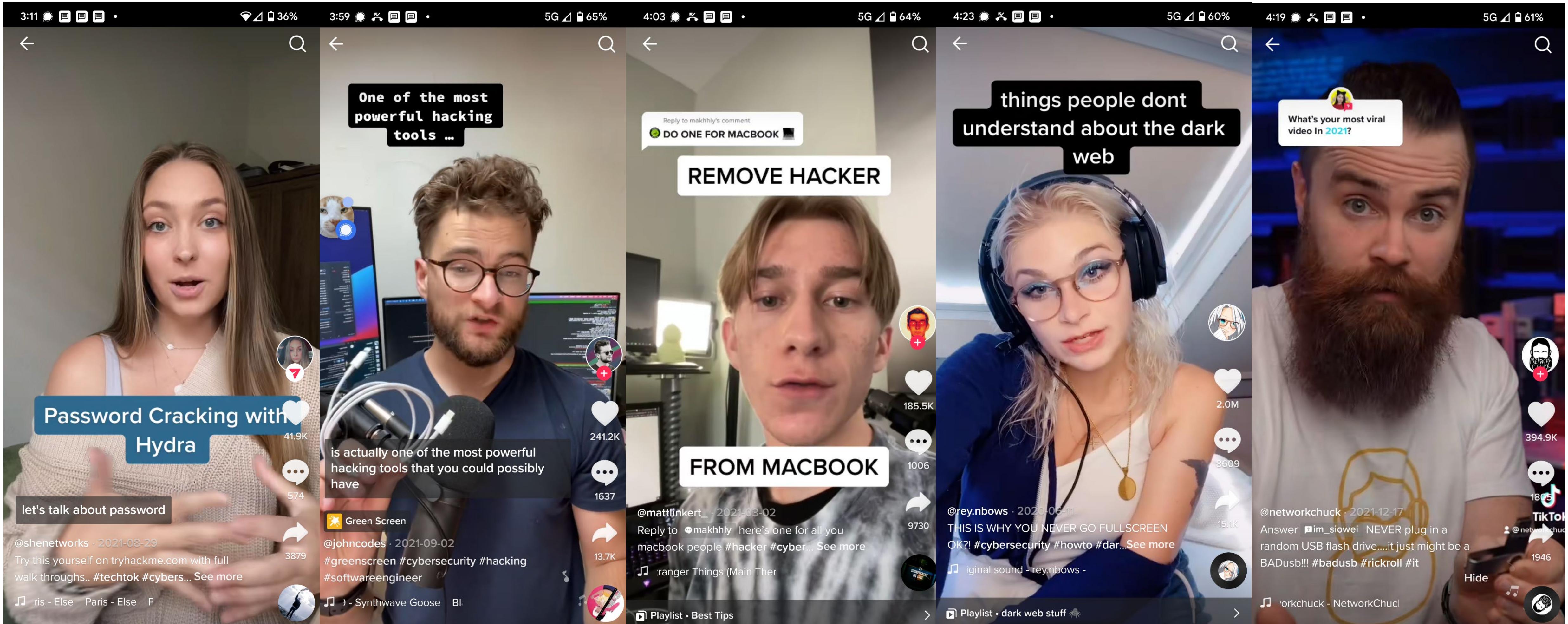


## Violation reasons

### Harassment and bullying

Users should feel safe to express themselves without fear of being shamed, humiliated, bullied, or harassed. We deeply understand the psychological distress that abusive content can have on individuals, and we do not tolerate abusive content or behavior on our platform. [See Community Guidelines](#).

# Other successful TikTok creators



# RSA® Conference 2022

## How are brands doing this?

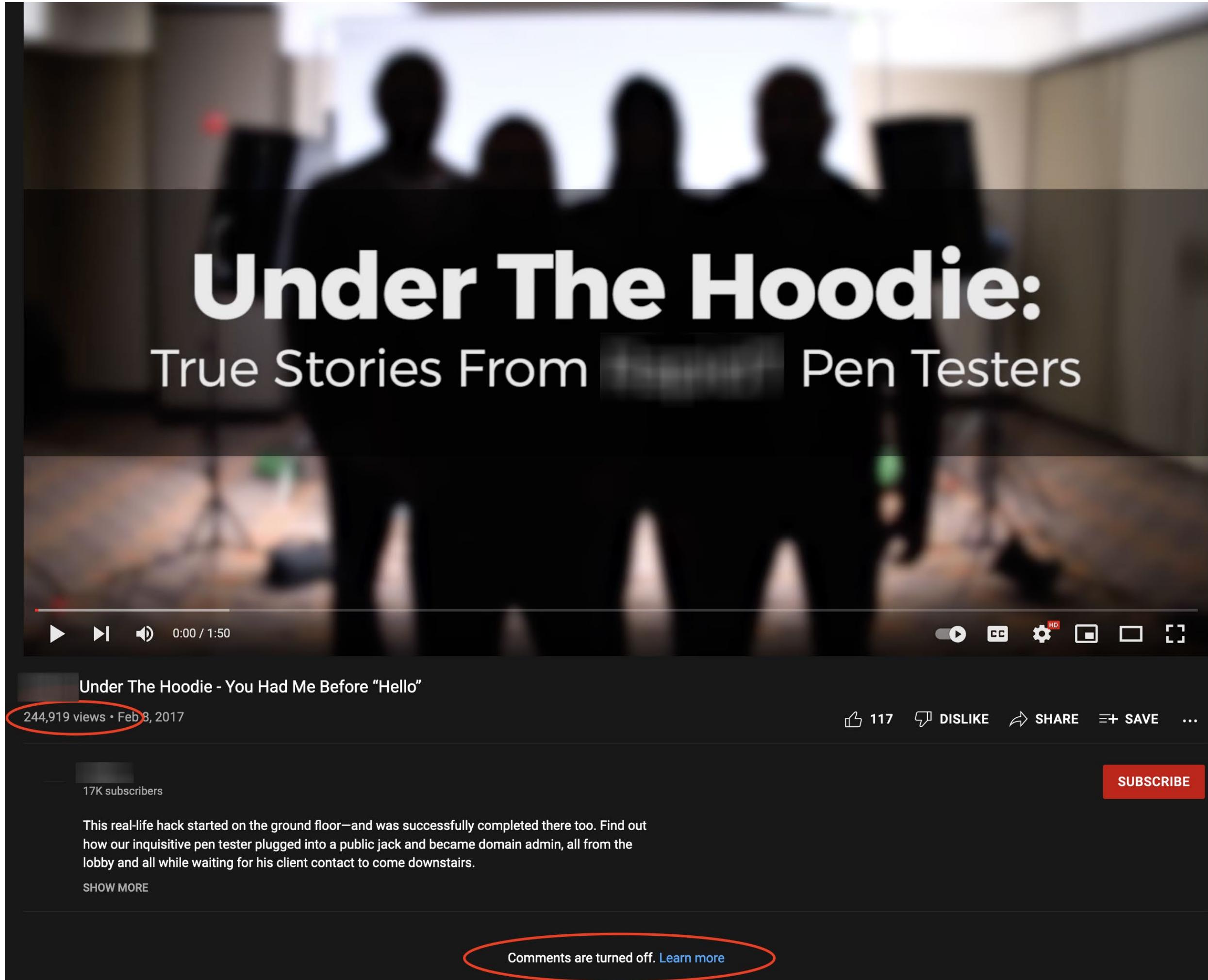


# Content creators who got it right

- "Under the Hoodie"
- “Mainframe Kid” / Hacker Interviews
- Mrwhosetheboss: “I Got Hacked by an iPhone Cable”

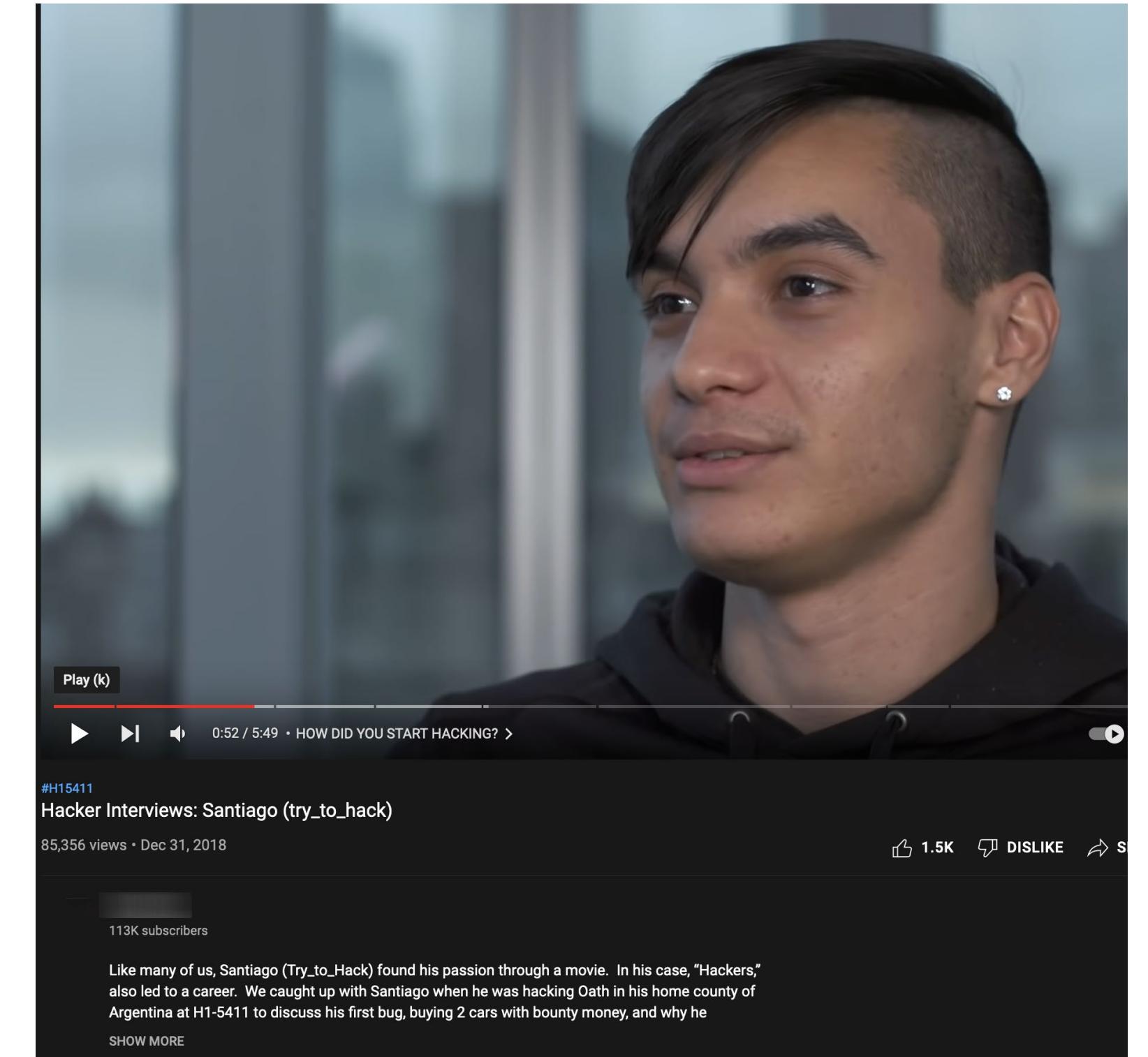
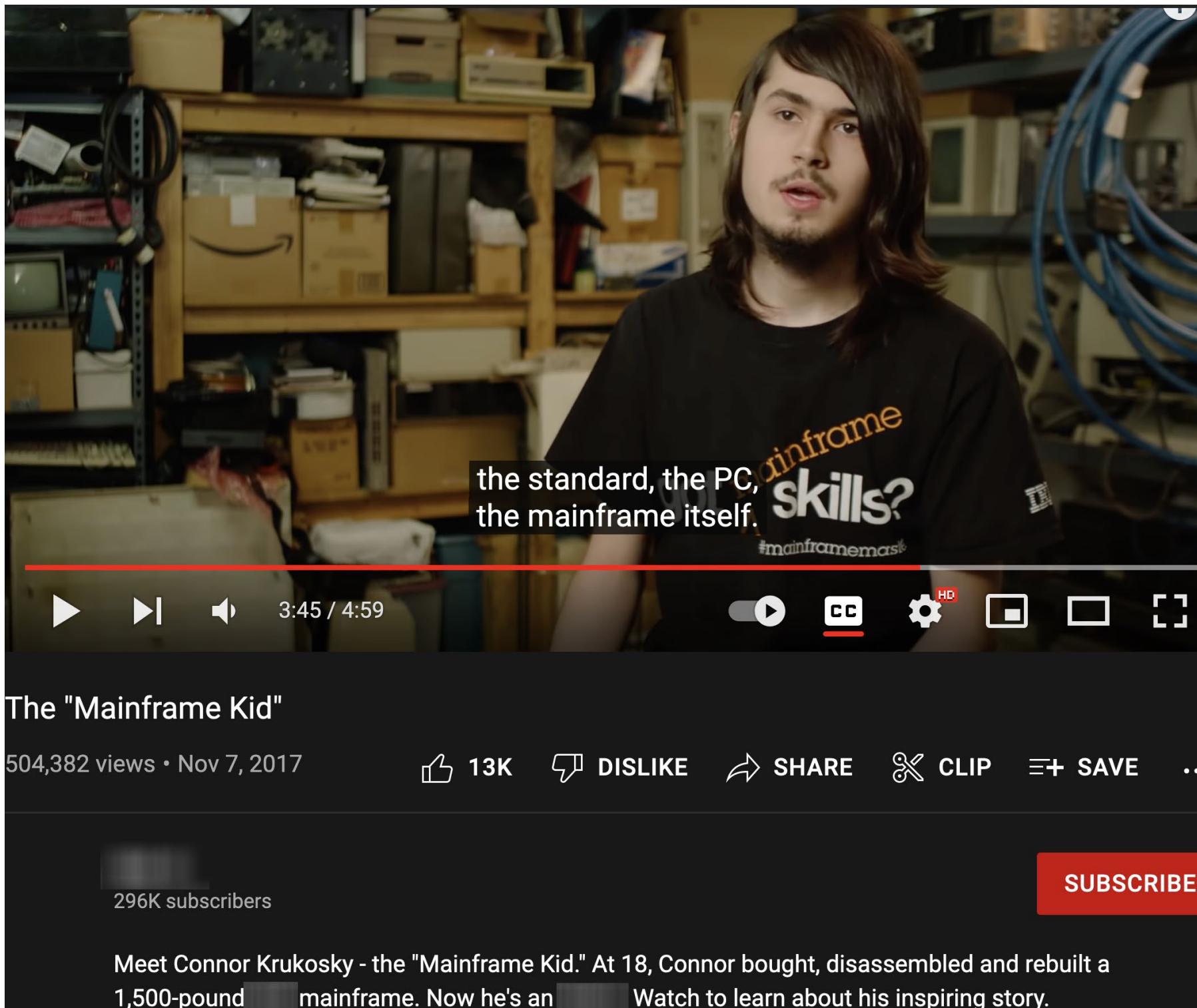
# "Under the Hoodie"

- Engaging story-driven format
- Real-life examples are spicy
- Real-life risks of customers assuming they're the subject
- Comments off (I'm sure that's unrelated)



# "Mainframe Kid" / hacker interviews

- High production quality
- Relies on access to personable role models



# High-quality introduction video

- YouTuber Mrwhosetheboss produced episode on malicious USB cables
- High production quality, playful, fun episode
- Interviews, narrative, and motion graphics set it apart
- 2M views in just five days



# Brands that missed

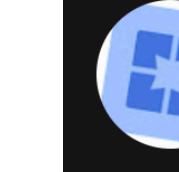
- “Phone on a Drone”
- “Whiteboard Wednesdays”
- Naked lady commercial
- Unrelated-industry professional interview
- Random marketing material

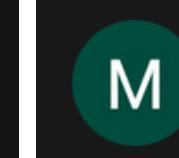
# “Phone on a Drone”

- Brand's most-seen video content
- One of the worst ratios I've ever seen
- 6M views, 10 comments
- No useful information

 Lucas Brunner 5 years ago  
Not realistic, how can a drone push a touch screen, how do you know which window to hover next to, can a phone even hack a printer let alone from a quadcopter, which are loud inefficient and have short flight times.

 Rednesswahn 4 years ago  
Because [REDACTED] Printers are insecure.  
  REPLY

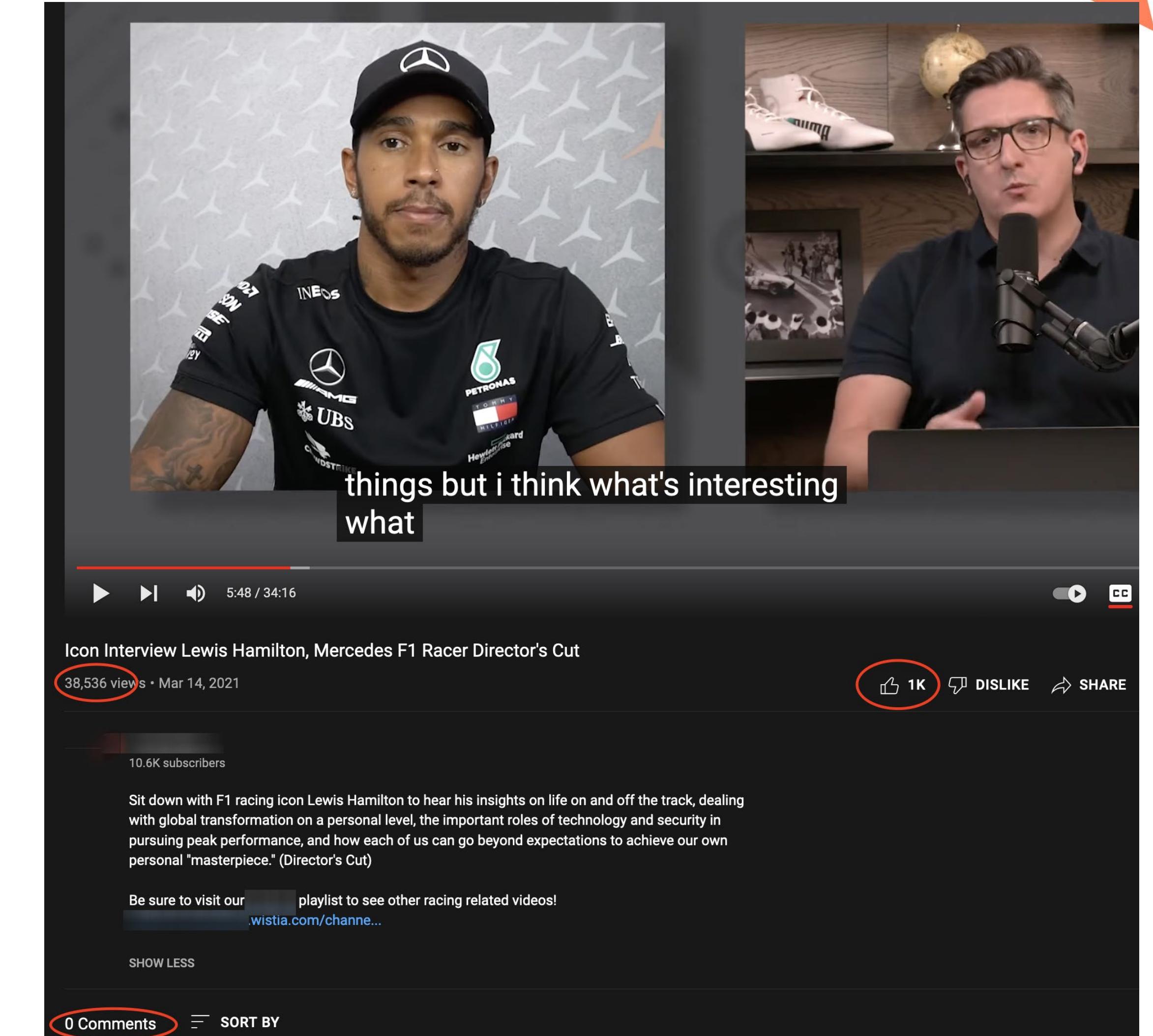
 RocketPhoenix 5 years ago  
edgy fear-mongering  
 5  REPLY

 Mike V 5 years ago  
It's an advertisement with a nonsense scare tactic.  
  REPLY



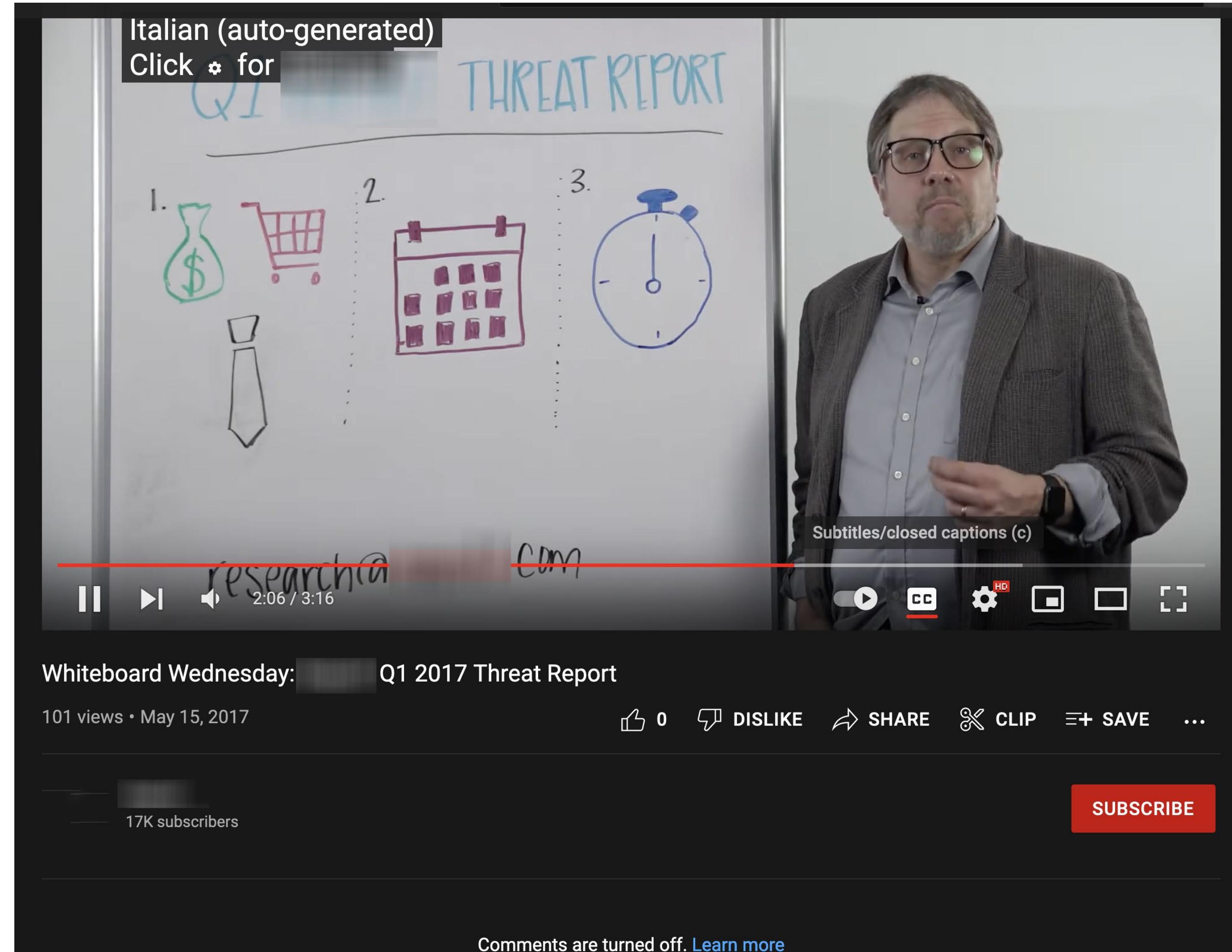
# Unrelated-industry professional interview

- Making someone from an unrelated industry talk about cyber content
- Worst of both worlds
- Low engagement
- I was the first comment



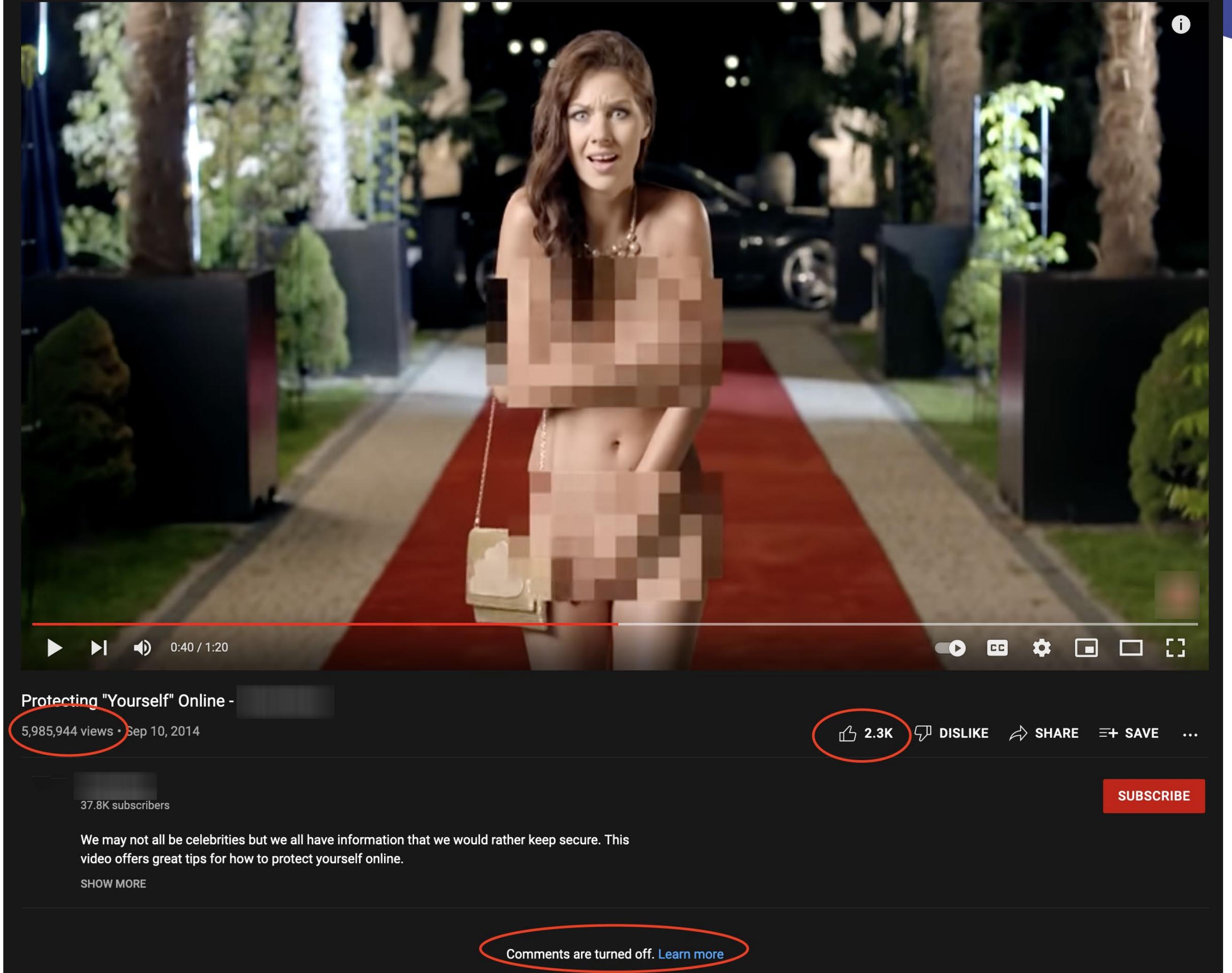
# “Whiteboard Wednesdays”

- Good idea
- Low production value
- Uncomfortable hosts
- Dry topics
- Comments are off
- Subtitles in Italian



# The naked lady

- The most-seen content by this infosec company stars a naked lady
- Comments are off
- I would not have done this...



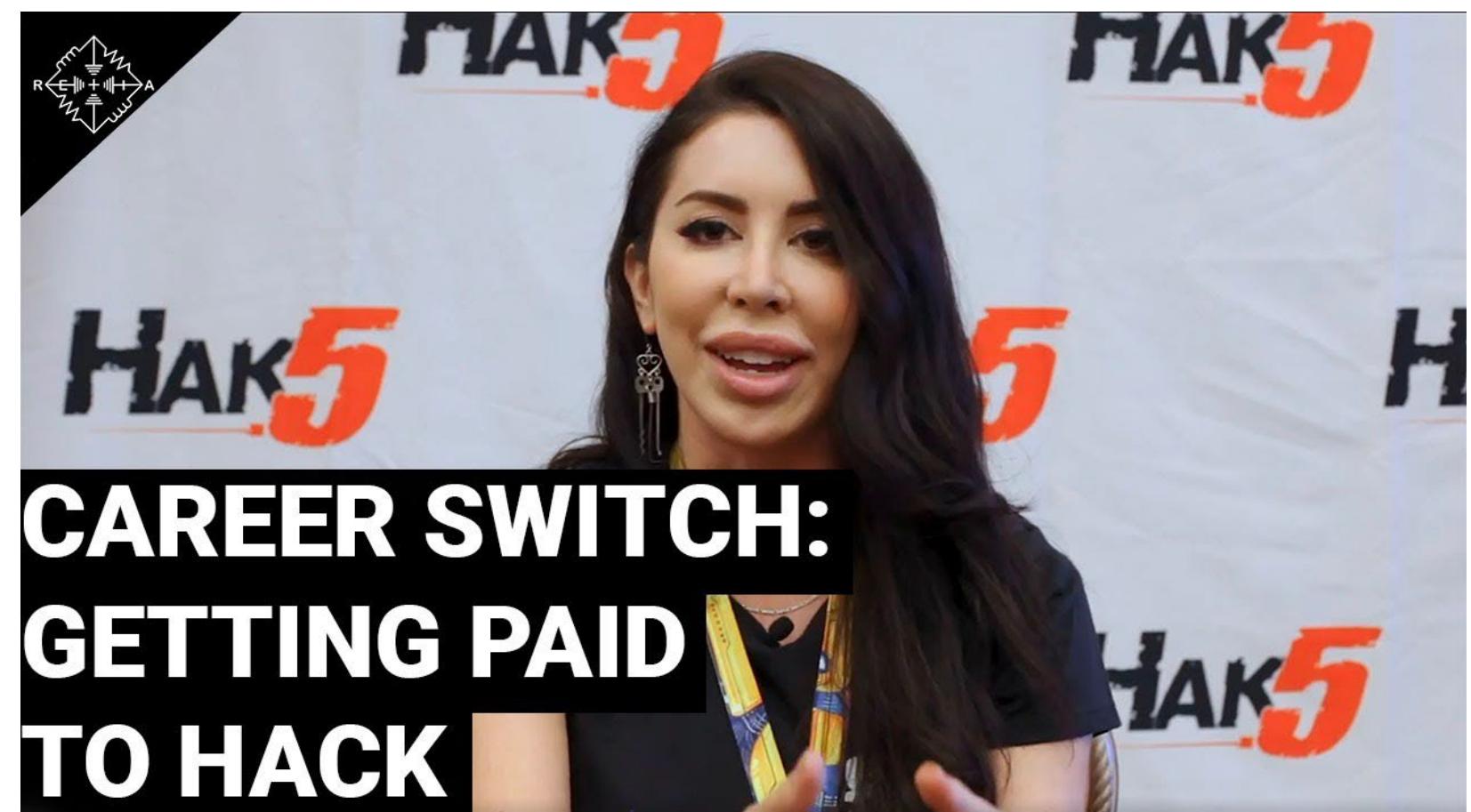
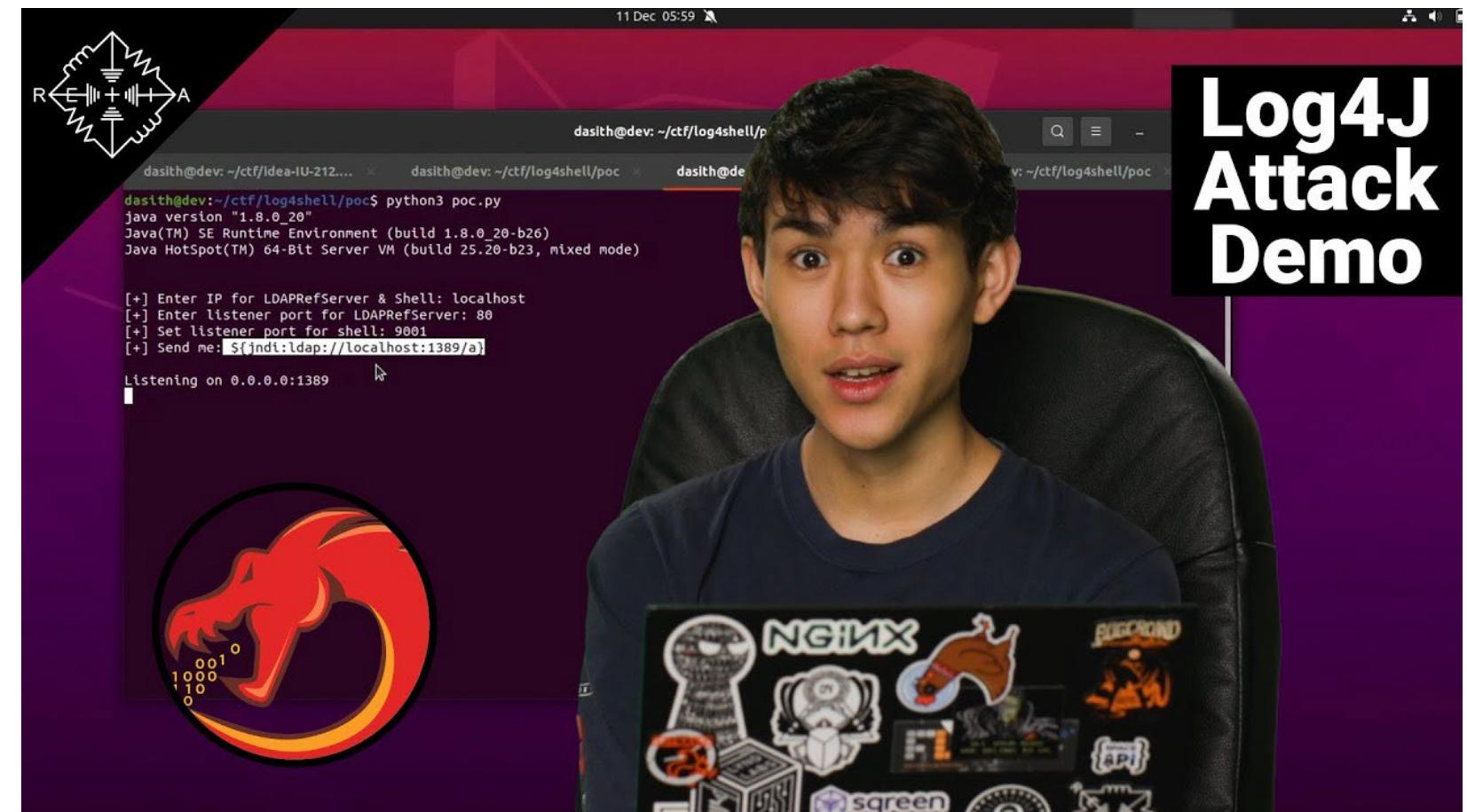
# Random marketing material

- Too many owners = sales material polluting marketing efforts
- 17K subs have no idea what content they're going to get
- Is 109 views worth posting this?



# Takeaways

- Infosec content shouldn't be dry or boring
- Authentic, useful, and balanced content spreads rapidly
- Gen Z learns about cybersecurity careers through social media
- Amplifying nontraditional creators helps attract diverse talent



# RSA® Conference 2022

**Thank you!**

Follow me at [@KodyKinzie](https://twitter.com/KodyKinzie) for more

