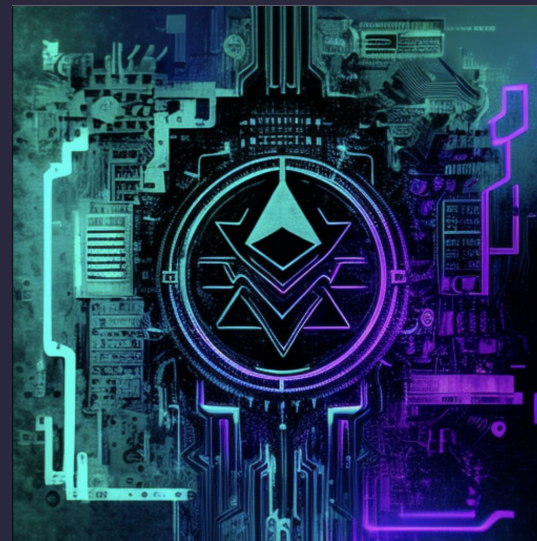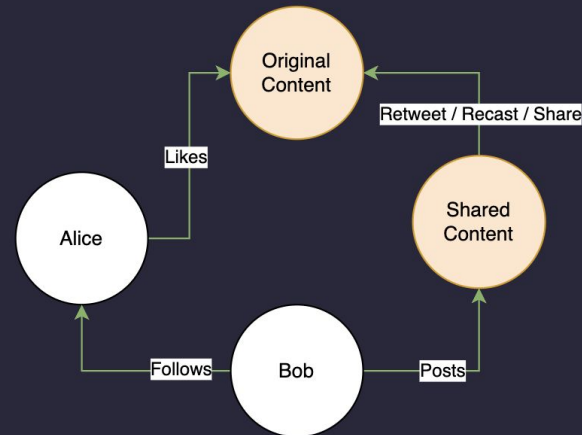# Farcaster Introduction

Martinet Lee

/Content

- What is a decentralized social network?

- The technical challenges of a decentralized social network

- Technical architecture of Farcaster

- What are solved issues and what still remains as challenges?

- Farcaster just released "Frame", what is it?

/ **What is a social network?**

- Users post content
- Users interact with content
- Users interact with other users

/ **Problems with Centralized Social Network**

- Control of content (Censorship, Privacy)
  - DMs are not encrypted

Twitter's decision to block certain content in Turkey the day before its presidential election was wrong, says the founder of Wikipedia.

Jimmy Wales told the BBC his organisation had spent two and a half years in court to avoid similar demands made by Turkey in the past.

He said he believed the tech sector should stand together in defending free access to information.

Facebook and Google have aided the Vietnamese government in censoring criticism and repressing dissent, says rights group Amnesty.

In a new report, the group accuses the tech giants of "far-reaching complicity" by blocking content deemed critical of authorities.

Vietnam's authorities have a reputation for restricting freedom of speech.

In recent years several bloggers have been jailed for publishing articles critical of the Communist state.

/ Problems with Centralized Social Network

- Control of how to read the content (Algorithm, could be related to censor)

Instagram users accuse platform of censoring posts supporting Palestine

Users say their posts no longer appear at top of feeds and some suspect platform is shadow-banning, or demoting content

Facebook 18 日再度宣布調整演算法，以對抗上述誘使粉絲參與互動、藉此提升粉絲團貼文觸及的行為。內部團隊針對數十萬則貼文進行審查與分類，以機器學習（Machine Learning）技術建立模型進行偵測，未來這類貼文顯示在動態消息（News Feed）的頻率將會降低。
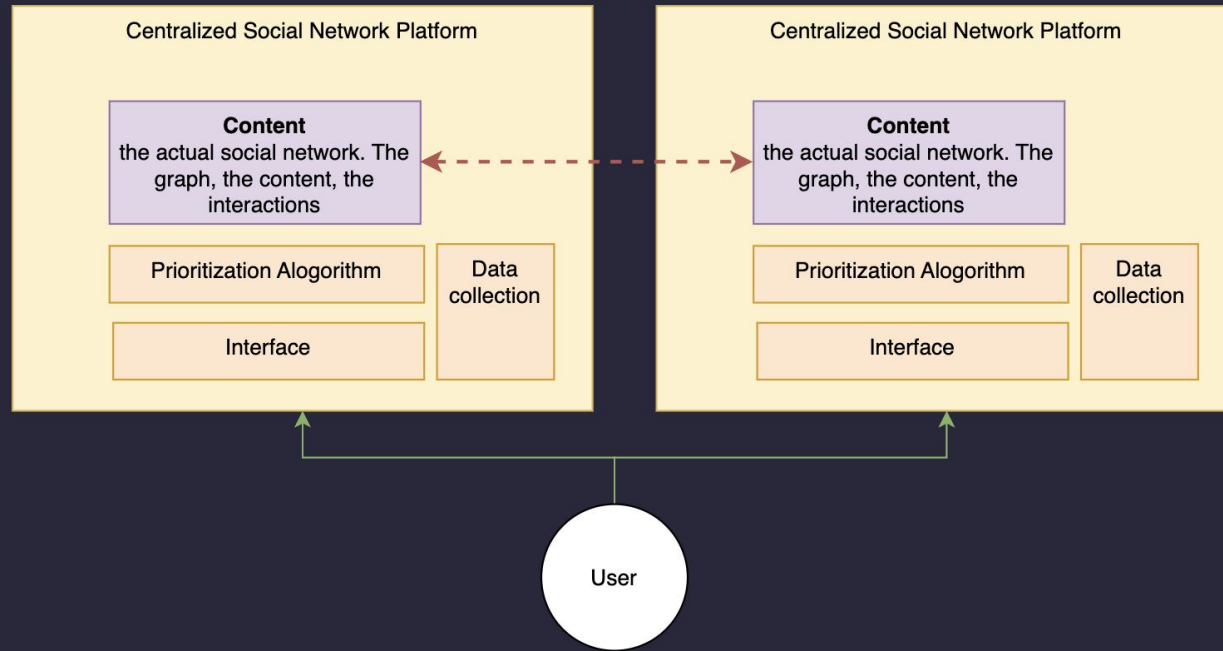
/ **Problems with Centralized Social Network**

- Control of Interface
  - Privacy: What data was collected by the interface
    - IP, Location, Metadata, …
  - Preference (How do I want to see the content)
    - Do you like Twitter's interface, Discord's interface, Facebook's interface, or others?

Cloud storage firm pCloud made the discovery after analysing the recently introduced App Privacy labels that companies are now required to include within Apple's App Store.

The study found that Instagram collects 79 per cent of its users' personal data and shares it with third parties, including search history, location, contacts and financial info.

"Any information you agree to be gathered by an app when signing up can be analysed for their benefit and even shared. Everything from your browsing history, to your location, your banking details, your contact details, and your fitness levels can be valuable for apps to store, use, or sell on," Ivan Dimitrov, a digital manager at pCloud, wrote in a blog post detailing the research.
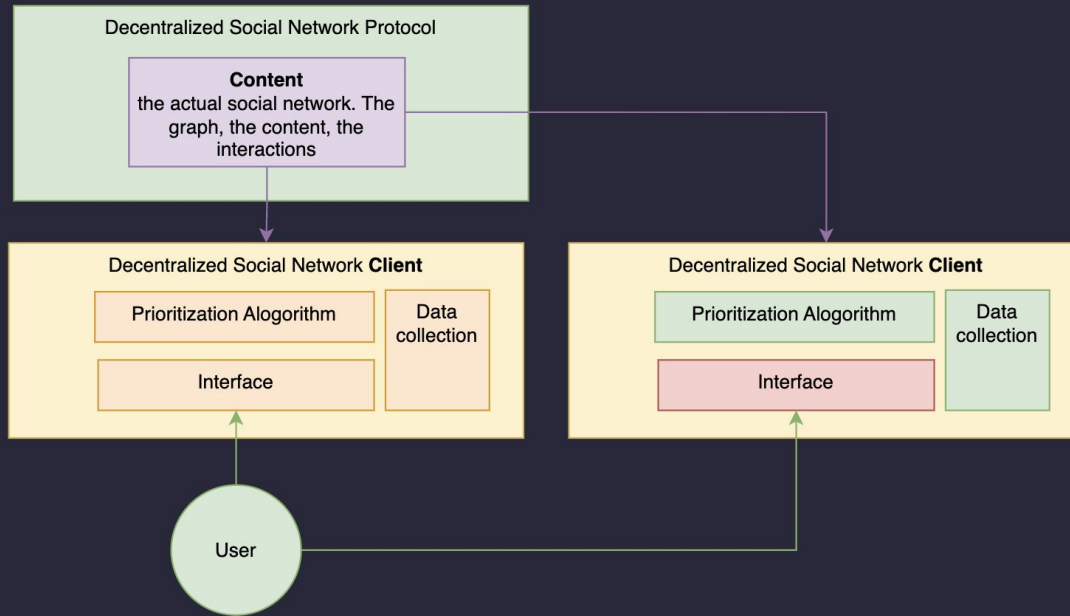
/ Power of social platform over regular users

/ Power of social platform over regular users

- Once a social network is established within a centralized platform, there's nothing a user can do if they dislike any of the decisions made by the service.

- The only way is to give up ALL the network they have established within the platform.

- High cost of migration = Platforms can exploit users more
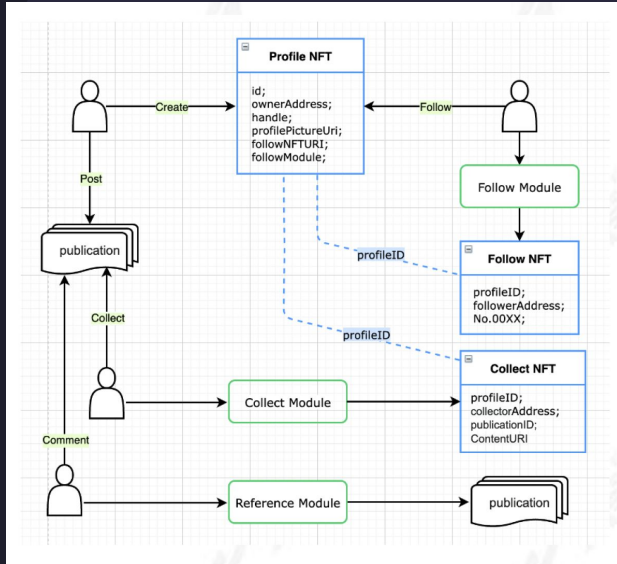 - Privacy
  - Censorship
  - Monetization

/ Goal of Decentralized Social Network Protocol

/ Technical Challenge

- Identity / Authentication
  - Need decentralized identity
  - Make sure message sender is authentic
- Data Availability
  - data needs to be available for users when users are switching clients.
- Consistency
  - different clients should reach the same conclusion when there is conflicting message from the same sender.

/ Lens

- Identity / Authentication
  - Use blockchain, no special design
- Data Availability
  - All interactions are on the blockchain
  - All post/content are on another system (IPFS/Filecoin)
- Consistency
  - As all interactions are on the blockchain, consistency is solved by consensus
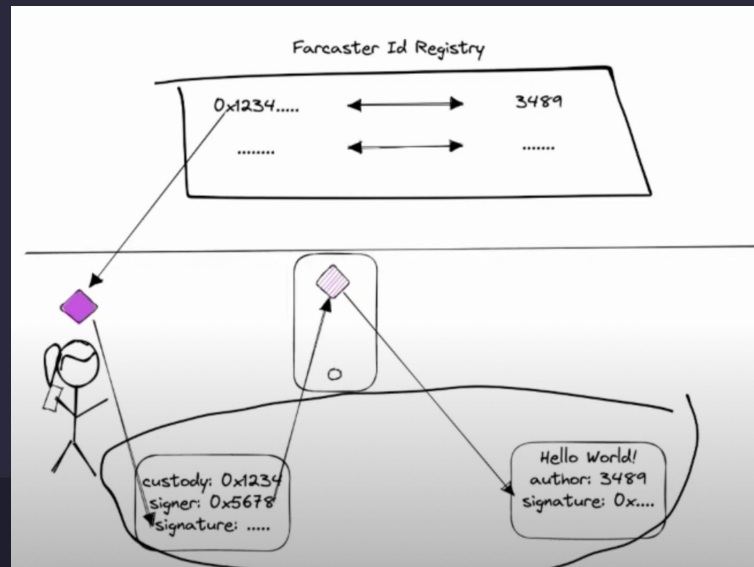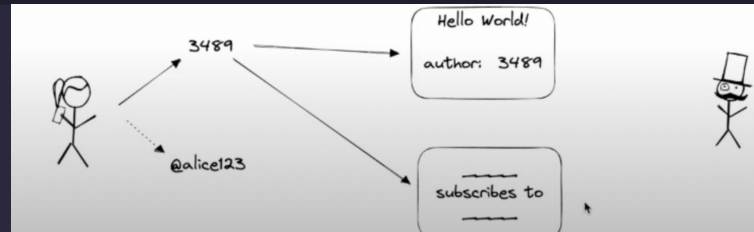
/ **Downside of Lens**

- Interactions (Publish, follow, retweet/share, etc) are on-chain:
    - Expensive!

- Uses Ethereum address without any other design
    - Loss of private key …

/ **Downside of Lens**

- Interactions (Publish, follow, retweet/share, etc) are on-chain:
  - Expensive!

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  - Loss of private key …

/ Farcaster's approach: ID and Authentication

- Custody address is the main address

- Signer Address is the address on device (less secure)

- Custody address can be lost
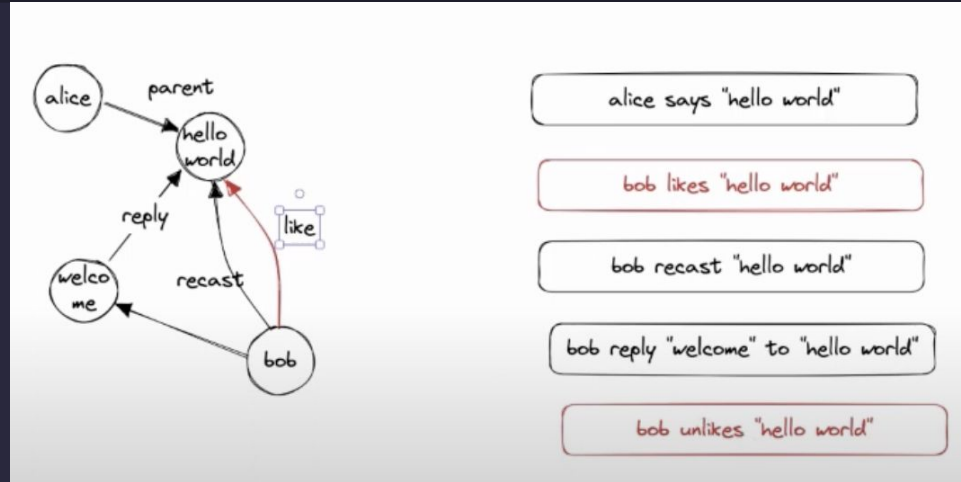 - an "ID"
  - Recovery address

/ Farcaster's approach: Data

- Hubs retains the data
  - Assumption: hubs are applications that benefit from just retaining the data, and not profit from holding data directly.

- Data has limited availability
  - FIFO
  - Assumption: There's no permanent data, users always want newer content in social network

- Users can purchase more data to be able to do more content
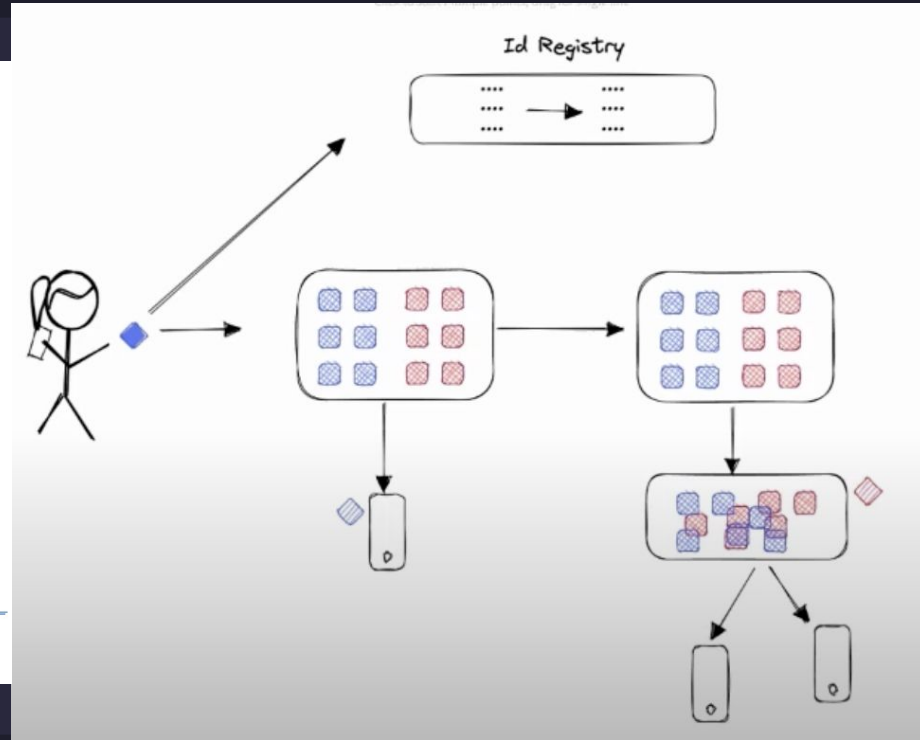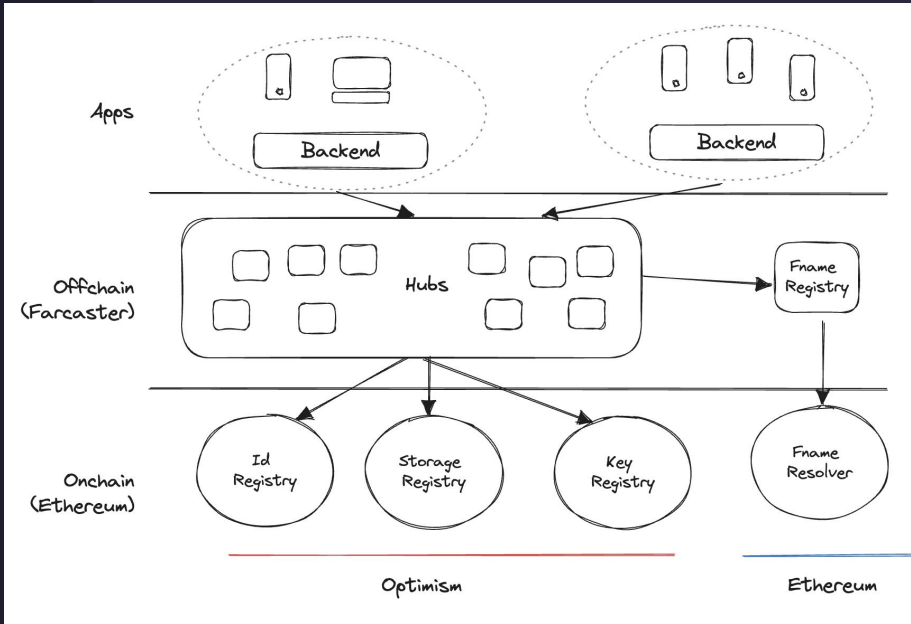
/ Farcaster's approach: Consistency

- Delta Graph:
  - A set of rules that ensures the result will converge even if the orders are different
  - E.g. if content is the same, ignore. if timestamp is newer, use the newer one. if the timestamp is the same, use hash as tie breaker.

/ Unsolved problems: Metadata Privacy

/ Farcaster Overall Architecture

/ Farcaster Frames

Programmable posts!?

woj — q/dau ✓ @woj.eth · 17h
Farcaster frames are live on Supercast!

We are celebrating with a 1 tap mint, in a collab with the legends
@jacopo.eth and @zerohex

- Recast, follow @supercast and join /supercast
- 1000 nfts
- Farcaster exclusive, on @base

Grow on Farcaster with Supercast 🤝

FREE MINT

Supercast and Slice collaboration
celebrating the launch of Farcaster
frames on Friday, 26th of January 2024

Grow on Farcaster with Supercast
Sell on Farcaster with Slice

Mint

🔲 Farcaster

Recommended in frames
Sinaver ✓ @sinaver.eth · 17h
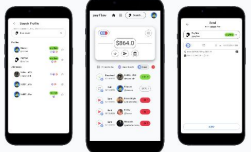Made a simple frame for @payflow:

Connect and check your profile status:

- registered
- invited
- not invited

So far, I used only fid + @airstack, but I already see using hub
interesting use cases 🏳

Onchain Social Payments made easy
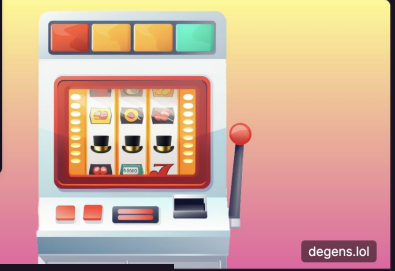
abstracted | gasless | non-custodial

🔲 farcaster 🔲 lens 🔲 ens

payflow.me/yourname JOIN
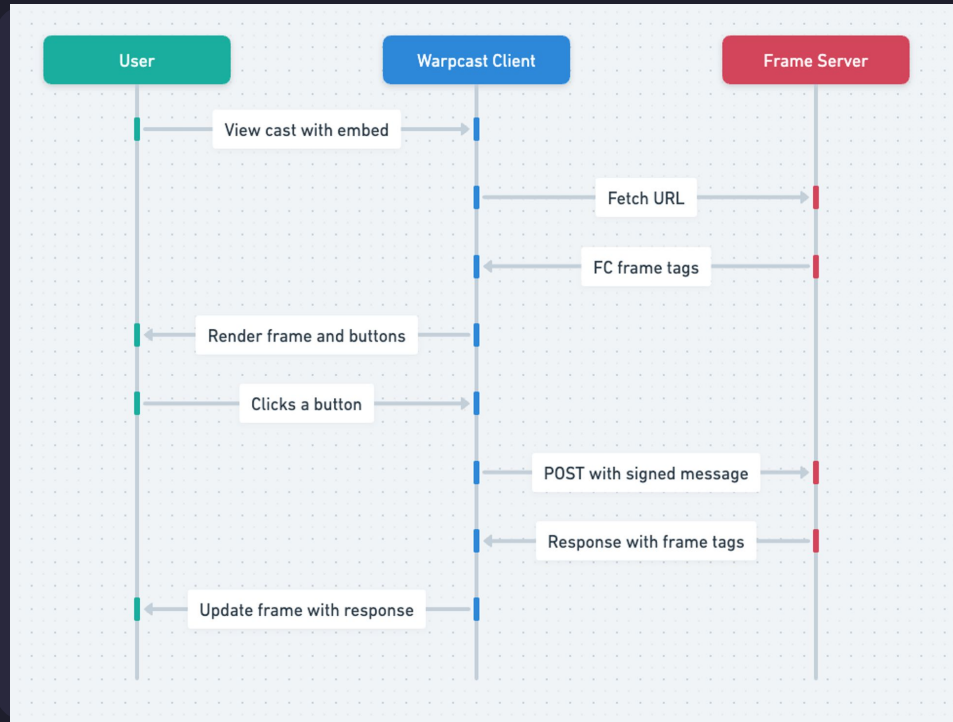
Connect

Jesse Pollak 🔵 and 2 others recasted
Jason Chaskin ✓ @chaskin.eth · 16h
Powered by @airstack

Pick a chain
to show a random NFT
you own on that chain

random-nft-frame.vercel.app

| Ethereum | Base | Zora |

/ Farcaster Frames

User — Warpcast Client — Frame Server

View cast with embed

Fetch URL

FC frame tags

Render frame and buttons

Clicks a button

POST with signed message

Response with frame tags

Update frame with response

/THAT'S A WRAP! 🎤 (mic drop)