SIN JComp Review 1

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Community Detection in Twitch Communities

Community detection in social networks, especially those centred around influencers like Twitch streamers and their viewers, can provide valuable insights into the structure and dynamics of these online communities.

What is Twitch?

Twitch is an online platform centred around live streaming, where people broadcast themselves playing games, creating art, or engaging with audiences in real time. This interactive platform has given rise to influencers, individuals who attract large followings through their captivating content and live interactions. Twitch hosts diverse content beyond gaming, including creative arts, music, and discussions, fostering communities around various interests. With live chat, emotes, and interactive features, Twitch has redefined how people connect, consume content, and build communities around shared passions.

What is Community Detection:

Community detection is the process of identifying groups of nodes (individuals, entities, etc.) in a network that are densely connected to each other but less connected to nodes outside their group. In the context of social networks, communities can represent clusters of users who share common interests, interactions, or affiliations.

Importance of Influencer Networks:

Audience Segmentation:

Segmenting viewers with shared preferences allows tailored content, fostering stronger connections and viewer satisfaction. By understanding diverse audience segments, influencers can curate content that resonates deeply and creates a more personalized viewer experience.

Influencer Strategies:

Analyzing viewer engagement patterns empowers influencers to refine their strategies and resonate more effectively with their core audience. By identifying their most engaged viewers, influencers can adapt their content and engagement styles to cultivate a loyal and dedicated fan base.

Collaboration Opportunities:

Recognizing overlapping audience segments among influencers opens doors to strategic collaborations. Shared viewer groups indicate potential for joint ventures, enabling influencers to cross-promote and introduce their content to new audiences, leading to mutual growth and increased community engagement.

Content Recommendation:

Comprehending viewer preferences enhances content recommendation systems, guiding viewers toward streams that align with their interests. By leveraging this data, platforms can introduce users to new influencers and content creators, facilitating a dynamic and engaging viewing experience.

Dataset:

Dataset for preliminary EDA is a dataset from January 2021, but we can use the latest dataset by creating it through Twitch's REST API if needed.
The dataset contains edge data with labelled nodes, where each node is marked with the username (as opposed to anonymous edgelist).

Example for node data:

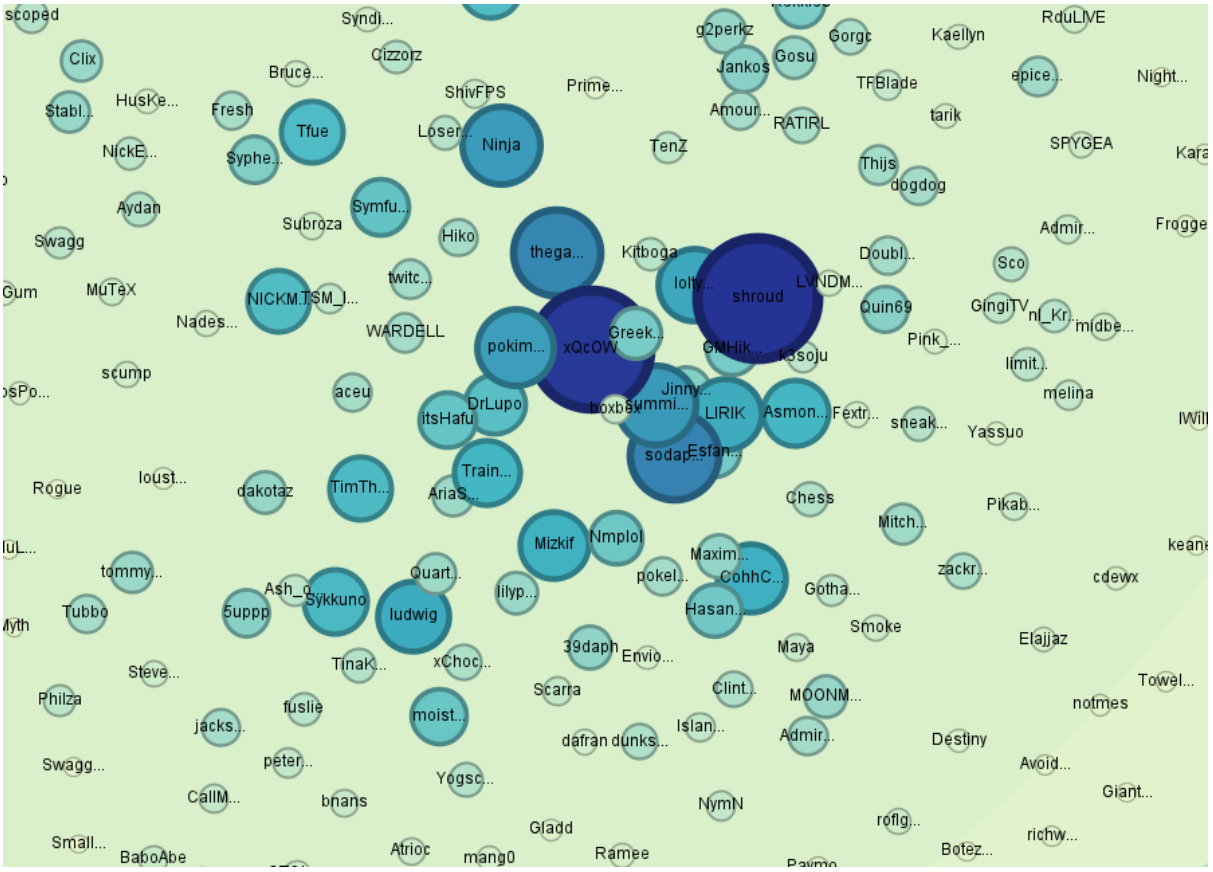
Id	count
thegameawards	492815
tommyinnit	488522
ibai	486692
xQcOW	443558
auronplay	440981
shroud	431547
BLASTPremier	299853
TheGrefg	296178
Rubius	276121
Sykkuno	270914

Id - Node Label; Count - Number of unique viewers (number of times the streamer appears)
Example for edge data:

Source	Target	Weight
Quin69	mistermv	480.0
Quin69	lilypichu	552.0
Quin69	Steelmage	1961.0
Quin69	melina	460.0
Quin69	Fextralife	552.0
Quin69	Scripe	461.0
Quin69	g2perkz	839.0

Source - Streamer which has the link; Target - Streamer they are linked to;
Weight - How important the connection is
Note: The edges are undirected, so source and target are interchangeable

Example snippet of full graph with preliminary data:



Node size - Number of unique viewers
Node colour - Number of unique viewers in above screenshot
Proposed → Different colours and shades for different communities

Node arrangement in the above shot is the result of Fruchterman Reingold with default parameters in Gephi.

Goal of the project

We intend to use the user’s viewing data and use the overlap of viewership to create cliques or communities within the social network, and then label the networks based on their commonalities.