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# Project Proposal - TWITCH

A platform where content creators can stream live and interact with their followers to allow for a more dynamic and interesting type of social interaction.

Twitch stands out as a cool multimedia system due to its live-streaming capabilities, interactive features, and diverse community of content creators and viewers. It provides a platform for gamers, artists, musicians, and other creative individuals to showcase their talents and connect with an audience in real time.

Twitch faces significant technical challenges, including low latency streaming, content discovery algorithms, chat moderation, monetization tools, and mobile streaming optimization. These hurdles hinder real-time interactions, personalized content discovery, user safety, revenue generation, and mobile streaming efficiency. Our project seeks to address these challenges to create a more immersive and interactive multimedia platform.

Here are some of the topics that we may look into when looking at Twitch:

- Low Latency Streaming: Twitch faces challenges related to low-latency streaming. While it has made improvements, achieving consistently low latency without compromising video quality remains a technical hurdle. Addressing this challenge would enhance real-time interactions between content creators and viewers, creating a more engaging experience.

- Multiple Bitrate Options: To accommodate viewers with different internet speeds and devices, Twitch typically offers multiple bitrate options for a single stream. Viewers can manually select a lower or higher bitrate to match their network capabilities.

- Real-Time Encoding: Twitch employs hardware and software encoding solutions to efficiently compress and transmit live streams. Streamers can choose their encoding settings based on their hardware capabilities and the quality they want to deliver.

Methodology

- Conduct in-depth research and analysis of existing technologies and algorithms related to low-latency streaming.
- Conduct a detailed analysis of various bitrate options considering different internet speeds and devices commonly used by Twitch viewers
- Evaluate various hardware and software encoding solutions available in the market. Conduct rigorous benchmarking tests to compare their performance metrics, such as compression efficiency, latency, and resource utilization.

## Website Link
https://csc461projecttwitch.wordpress.com/