

SIT764 Spike Report

Spike Description:

Technical spike: Best machine learning algorithm which can be used to process data from video sources.

Spike Reference

Pros and Cons

ABR Algorithms

Pros:

- Adaptive Bitrate Algorithm stores videos in chunks
- Dynamically selects bitrate for each video chunk
- Bitrate selection made based on parameters like playback buffer occupancy and network throughput
- Maximises user's quality of experience

Cons:

- Network conditions and Quality requirements cannot be generalised based on network throughput and buffer occupancy

Pensieve Algorithm

Pros:

- Applies reinforced learning on ABR.
- Does not have pre-set criteria or rules for bitrate selection.
- Dynamically selects the parameters and hence majority of quality requirements can be generalised.

Cons:

- Neural network needs to be trained with proper data set with wide range of network conditions.

Recommendation:

Penesieve Algorithm which implements machine learning techniques, with proper training over a period can render system with optimum performance.