MANTIS: Wireless YouTube Load-Shifting

Based on an individual's watch history, this algorithm downloads YouTube videos during non-peak hours, reducing the total amount of data being used towards YouTube.

Georgia Tech inventors produced a solution, called MANTIS, which aims to shift peak-load traffic to off-peak periods for wireless service providers. The algorithm created uniformly distributes the loads of wireless cellular networks throughout the day, which decreases the traffic during peak periods by 36%. So instead of downloading the video on the spot, the algorithm accurately predicts what videos the user will view based off their behavior, prefetches it during off-peak times, and makes it available prior to when the user would typically interact with YouTube. MANTIS utilizes a machine learning classification algorithm called KNN classification.

Summary Bullets

- **Shorter download times**- videos are downloaded during non-peak hours
- **Decreases data usage**- due to less online traffic during download
- **Less cost**- due to less bandwidth required

Solution Advantages

- **Shorter download times**- videos are downloaded during non-peak hours
- **Decreases data usage**- due to less online traffic during download
- **Less cost**- due to less bandwidth required

Potential Commercial Applications

- Wireless service providers
- Youtube users

Background and More Information

Currently, 60% of a user's data is being consumed by fetching YouTube with an on-demand type of download for the video. However, during peak download times (typically during the day rather than the night), more data is required to download the video due to higher traffic. This is troublesome for telecommunication companies since more bandwidth is required as a result of customers over consumption of data usage. For instance, it is typical for their infrastructure to be upgraded and spectrum to be added when there is a sustained peak usage that exceeds 80% of capacity. Moreover, there is currently no commercial solution for shifting data loads throughout

the day.

Inventors

- Dr. Raghupathy Sivakumar
  Vice President of Commercialization and Chief Commercialization Officer, Georgia Tech
- Shruti Lall
  PHD Candidate - Georgia Tech School of Electrical and Computer Engineering

IP Status

:

Publications

, -

Images

Visit the Technology here:
[MANTIS: Wireless YouTube Load-Shifting](#)

https://s3.sandbox.research.gatech.edu//index.php/print/pdf/node/3449