Video Streaming in Vehicular Networks

Patrick e Anderson

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1 Introduction

We will approach here two growing points with the development of new telecommunication technologies. One of them is being present on our daily routine around ten years [1]. The video streaming, popularized this years with the growing popularization of the social medias, big part of that is because of Youtube [2], nowadays we have other services like Netflix, that let users watch videos without keeping the data from videos on their devices, and still watch in a pratical way their movies, series and other content. Nowadays we have another kind of media, the live video streaming [3]. This kind of service let a user shares his content and other people watch it live, like the same thing that we have on televisions nowadays, but with the whole communication among content producer and their consumers within the Internet.

The second point, more recent and tendencious, are the veicular networks, maybe the bigest promisse of Smart Cities [4], a theme that has acquired attention in the scientific field, but its still, in its most part, unexplored. It consist in the communication among cars, in a certain way, in real time, in a maner they could exchange information that would be sustained, storaged, transported and manipulated by equipment that are between the cloud and the vehicles. With this form of exchange of information among cars and cloud servers the communication shall be quicker, cheaper and more efficient. This kind of network services will need to have a communication among them to be able to track a car in a certain path, minimizing the loss of packages, maintaining the QoS and still leting the cost of communication cheap [5, 6].

Our focus here will be study the way to improve the QoS of the transmission of this live streaming in a vehicular network. Our motivation becomes from the growing usage of this kind of live platform [7, 8] and the notorious interest of loading it with a good quality with low bandwidth, such as we have on cars on roads nowadays [9].

2 References

[1] Infographic about the history of streaming video: https://www.ustream.tv/blog/streaming-video-tips/a-brief-history-of-streaming-video/

[2] Bank of America analysis about importance of Youtube at the market: https://www.bloomberg.com/news/articles/2 05-27/a-bank-of-america-analysis-says-youtube-is-worth-more-than-85-percent-of-companies-in-the-s-p-500

[3] Definition of a live stream and a broadcast: https://developers.google.com/youtube/v3/live/broadcasts-and-streams

[4] *Md Whaiduzzaman, Mehdi Sookhak, Abdullah Gani, and Rajkumar Buyya. A survey on vehicular cloud computing. Journal of Network and Computer Applications, 40:325–344, 2014.*

[5] Shanhe Yi, Cheng Li, and Qun Li. A survey of fog computing: concepts, applications and issues. In Proceedings of the 2015 Workshop on Mobile Big Data, pages 37–42. ACM, 2015.

[6] *Tarik Taleb, Sunny Dutta, Adlen Ksentini, Muddesar Iqbal, and Hannu Flinck. Mobile edge computing potential in making cities smarter. IEEE Communications Magazine, 2016.*

[7] Numbers about one of the most important live stream company, Twitch.tv: https://www.twitch.tv/p/about

[8] Amazon bought Twitch.tv: https://www.wsj.com/articles/amazon-to-buy-video-site-twitch-for-more-than-1-billion-1408988885

[9] (*Seria bom uma referência comparando a banda de redes móveis com as caseiras.*)