

THEO Technologies

Streaming Video Support for 360° video applications

Internship

Leuven, Belgium (Europe)

THEO's vision & mission

[THEOplayer](#) is the industry-leading video playback partner for delivering a world-class viewer experience with HLS and MPEG-DASH across different platforms and devices. With our video player solutions for VR/360°, web, mobile web, Android SDK, iOS SDK and Chromecast Receiver App SDK, THEOplayer is a trusted video player partner for some of the world's premier telcos, broadcasters and publishers. THEOplayer has proven compatibility with industry-leading solutions for streaming, advertising, DRM and server side ad insertion. Our worldwide customer base includes companies such as CNN, Telenet, NBC, Twitter, Swisscom, France Télévisions, Telia, CERN, Nasdaq, Hudl, Cisco and Softbank. In 2017, 2018 and 2019 THEOplayer has won the Streaming Media Readers' Choice Award for Best Video Player Solution/SDK. THEO Technologies is one of the fastest growing technology companies in Belgium. We are an ambitious team who have been disrupting the global online video industry since 2012. THEO Technologies has offices in Leuven (HQ - Belgium), Singapore (Singapore), New York and San Francisco (USA).

With video streaming on the rise, media services need to differentiate and strive towards increased engagement with their viewers. With an overload on potential content being available, media services need to capture the attention of their audience in a better way, improving access to content, discoverability as well as ease of use and quality of experience. In order to facilitate media services, THEO Technologies is planning to simplify the setup of capabilities improving the user engagement.

Description internship

Streaming video over the internet is a well-understood domain. The video is cut into smaller parts that are transferred using HTTP requests. Adaptive BitRate (ABR) approaches allow to select the most suited bitrate given the changing network conditions. Streaming 360° or complete free viewpoint video is less straightforward. A 360° video contains information from a 360° view out of which a suited viewpoint is extracted depending on the users' viewpoint preference. The size of a complete 360° image needs to be very high to allow high quality viewpoints. Transferring





the complete image from server to client, followed by client-side viewpoint extraction requires a lot of bandwidth.

In this internship we **investigate approaches to extract the viewpoint at the server** and to have the server sending only the requested viewpoint (based on position information received from the user, such as the direction in which the user is looking when wearing a Head Mounted Display).

The student will first get acquainted with video streaming and 360° video. (S)he will use standard software packages such as ffmpeg and OpenCV to extract the viewpoints. The student will make a technology demonstrator allowing to transfer the viewpoint images from a server to a client, leveraging existing software.

Does this sound interesting to you?

Please send your resume and cover letter to careers@theoplayer.com. We look forward to hearing from you.