VideoSense: A Contextual In-Video Advertising System, IEEE , 2009

Since the current means of advertisement in videos are annoying and mostly not relevant to the actual content of the videos, the problem that this paper deals with is to make ad-content in videos more seamlessly integrated and less annoying. The technique that this paper talks about for ad-insertion are Video Object level advertising and Video Segment level advertising. The paper draws necessary attention to identifying suitable ad-insertion points and draws comparisons with other ad schemas

The assumption that this paper makes is that Videos become less interesting to users at points of discontinuity and that these non-contributing scenes in the videos allow as perfect positions for seamless ad-insertion.

The main claims that this paper makes is that ad-insertion is a nonlinear integer programming problem with an optimization problem. Since this paper is the first of it’s kind dealing with this problem statement in detail, it pioneers the seamless ad-insertion concept.

The key technique that is a takeaway from this paper is Object level advertising wherein images of products or brands to be advertised are placed on static non-contributing objects in frames within the videos. It also enlightens us on the advantage of creating a custom dataset for this specific task.

what does it relate to? (problem, data or technique you plan to use) (ii) any assumptions in the paper? (iii) what are the main claims? (iv) what is the takeaway from this paper for you

CAVVA: Computational Affective Video-in-Video Advertising , IEEE, 2014

This paper deals particularly with Video Segment level advertising. It gives information about the outdatedness of traditional ad-insertion methods as can be seen being implemented in popular sites like YouTube. They build on the original concepts laid upon by the VideoSense paper.

The assumptions that they make is that points of insertion for ads are highly dependent on the emotional state of the user viewing the video which depends on several other factors.

They claim that they achieve a good balance between conflicting goals of minimizing user disturbance due to video insertion while enhancing the user engagement with the advertisement itself.

The paper properly provides context for the challenge itself and proposes certain parameters that can be considered while developing the recommendation system. They also give good insights to the testing phase to properly measure the performance of the model we build.

Embedding user preferred advertisement in video playback in ecommerce, International Journal of Pure and Applied Mathematics , 2018

This paper talks about the benefits of improved advertising systems for ecommerce companies. It gives a model approach for advertisement and promotion of products sold by these companies. It gives insights on the already established idea of ad insertion in videos to particular users who are most probable to be influenced by these ads. The implementation and the model produced by them is a real-time framework and this can be particularly helpful for us to build ours to.

The process defined in this paper for User preference mining based on user’s behaviour is a key takeaway for us that could provide us with insights to develop out own model. They also talk about utilizing the surf detector algorithm that they use to use to classify video scenes with products of advertisement. This algorithm could be of potential use to us.

Paper 1 :Interactive Video Advertising: A Multimodal Affective Approach, LNCS , 2013

This paper talks in detail about affect and interaction for the online video-in-video advertising problem. The paper proposes a novel multimodal approach to model affective state of the viewer. It fuses content-based aroused arousal with pupillary dilation and content-based valence with facial expression and gives good agreement with human annotated ground truth. It also proposes an interactive model for a single-user personalization-based video-in-video advertisement system based on particular selection strategies.

The key takeaways from this paper is the way the multimodal fusion technique was implemented. It also gives us good insights on how to evaluate the model and gives hypothetical performance metrics.

Paper 2: Context-Dependent Sentiment Analysis in User-Generated Videos, Association for computer linguistics, 2017

This paper talks about multimodal sentiment analysis in videos. They talk about the utilization of a LSTM- based model that enables to capture contextual information from surroundings. This is beneficial to us to understand the context of an image based on objects within the image and surrounding text(if any).

They claim to have 5-10% performance improvement over state of the art and high robustness to generalizability.

The key takeaways of this paper are the multimodal approach and the characteristics of the 3d-CNN(Visual feature extraction) and text-CNN they have implemented for context analysis.

Patent : INTERACTIVE PRODUCT PLACEMENT SYSTEM AND METHOD THEREFOR

The patent describes the process of static ad placement techniques in videos at pre-defined cue points. These ads are mostly in the format of images that are similar to the Video object level advertising approach. This patent talks about placement of such images at these cue-points without having any contextual analysis method. These ads however are capable of rerouting users to other landing pages where these products are being sold or brand marketing pages.

They take away from this patent is the cue point approach. However, the major difference is while these cue points are static and are pre-defined, out approach involves these cue points being dynamic. The images inserted as ads itself shall be recommended based on a certain degree of contextual analysis.