3 avril 2010

ACM 2010 : short paper

VidéoLivre / Book-Video

collaborative annotation, polemical semantic and dynamic ontologies

Video Corpus

The concept of Video-Livre or Book-Video was motivated by the need of an indexed corpus of video-interviews. Indexed content opens the possibility to access and to manipulate the content easily and thus to open it to critics and intellectual discourse. Therefore the video content would eventually obtain a status of academical corpus in the same way the printed corpus.

Video Template

The original plan was to rationalize the format of the interviews in order to allow pertinent indexation.
We focused first on trying to standardize the interviews through a template of questions in order to make an automatic pre-segmentation and tag-indexation possible. The template carries editorial decisions that supposedly structure the content and set a top-down control on the content.
This top-down feature characterizing at first the Video-Livre is an attempt to balance pure bottom-up content, which is often considered as lacking long term impact because of its inability to exist within categorized corpus. It is an attempt to higher the level of personal contribution.
Pre-segmentation would be the first step to video-chapters with a common base of tag for each chapter. The Video-Livre would be then open to a a more interpretative level of annotations through the online platform of consultation, annotation and eventually auto-production.
However the constraint of a template applied to speech appeared rapidly to be inappropriate to direct expression to a camera. Pre-segmentation and indexation remains an important aspect for a balanced top-down and bottom-up articulation but the core of the problematic seems to take place at a higher level of abstraction such as the metadata format rather than in the Video-Livre format or template.

Collaborative Annotation

In any case, remained the necessity to organize the debate and the intellectual discourse around the video corpus. The issue pushed simultaneously our team to bring deep-annotation tools such as Ligne de Temps towards a more collaborative approach with shared annotations and contribution through an online platform of consultation and annotation.
Lignes de Temps is a standalone video annotation tool based on a format of metadatas specific to video or *“temporal object”* content. Video-Livre inherits from the innovations brought by Ligne de Temps and integrates visually the metadatas production and consultation within the content itself.

With the idea that the debate would gain in interest if it could visually takes place within the content itself, users accessing the corpus of Video-livre for consultation. The Video-Livre is made by the combination of the video itself and the associated metadatas, such as segmentation, tags, titles and descriptions, users annotations and as we will develop further on, the relationships with others elements of the corpus.

Format of Metadata

The innovation supporting today the object of this paper is an evolution of the format Lignes de Temps, which now integrates attributes of relationships between metadatas, such as relationships between a segment of a video and an annotation element for instance. As a metadatas, an annotation element is a data about a data. In a way, it describes it. We prefer to think that it enrichs it. As a *data of*, an annotation is linked by essence to a data or a content. What we propose in the evolution of the format Ligne de Temps is to link metadata to each other.
Linking metadatas is a powerful way to enrich the metadatas, i.e. to enrich the content itself. Coming back to the original concept of provoking debate and academical discourse around video content, links between metadatas produce meaningful association of ideas, bringing the content to another level of intelligibility. This new type of association between elements opens new horizons for extensive manipulations of video content. As a collaborative process of enrichment of the content, it let us foreseeing new ways of apprehension of any recorded content that can be film, interviews, talks, seminar, etc. The corpus would be collectively analyzed, tagged, classified and eventually criticized towards participative editorial selection and debate.

Polemical Semantic

The relationship between metadatas could be of different types according to the application. We based the relationships on polemical attributes with the ambition to stimulate debate and academical discourse over the content. The attributes are to take amongst those four : Agreement, Disagreement, Reference, Question. However it is easy to extrapolate to other purposes and applications and set up other classification of relationships, such as *like/dislike, belong to/inherit*, etc.
In addition, extra polemical links can be embedded into the metadata element towards other elements. For instance, one could link his annotation to annotations going in the same direction with agreeing relationship and simultaneously to annotations expressing the opposite opinion with disagreeing relationship.
Linked metadatas with polemical relationships form together a polemical network that can be visualized into a graph where debates, arguments, concepts emerge amongst the contributions of the users.

Contextualisation

Classifiying the metadata in relation with other elements of content or elements of metadatas is equivalent to contextualise the metadatas.
Ontologies tends to contextualise metadatas with a rather different approach based on the semantical relationships between concepts (Tom *is a* Cat *is a* Felin *is a* mammal, etc.). Our approach of contextualisation of the metadatas is to create associations with polemical relationships and therefore to enrich metadatas with a higher level of interpretation than the only semantical approach which is purely descriptive.
We foresee in this process of collaborative network of metadatas a sort of dynamic ontology based on classified/characterized relationships between metadatas rather than databased relationships between concepts.

Folksonomy

Whereas folksonomy automatically associate datas, thanks to a tag-to-tag automatic association process, we propose a network of linked metadatas where associations are proposed and classified/characterized by users. The associations emerge from a collaborative process and are enriched by qualitative attributes that enhance the level of intelligibility of the content. Considering a set of metadatas rather than a single concept expressed by a tag, the relationships inherit from higher interpretation degree. Tag folksonomy and collaborative contextualisation are meant to be complementary in the process of emergence of trends and opinion amongst a set a datas and contributions.

Augmented Player

Universal link towards any deep-indexed content