The xLiMe Project
crossMedia knowledge extraction

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Abstract. The goal of xLiMe project is to develop technologies to extract and integrate knowledge from 3 different content dimensions, which in most approaches have been treated independently from each other: (i) Content generated by and for different channels and formats (e.g., traditional mainstream media vs. social media), (ii) different content types (audio, video, text) and (iii) different languages.

1 Mission

Europe is different from other large media markets such as the US or China in that information is being generated in different languages and distributed via diverse streams of localized media channels. Automatic analysis is complicated further by different content types (audio, video, text) and different channels (mainstream, social media). Thus, information can only be analysed independently for each dimension. This restricts the extractable knowledge and keeps it fragmented, which ultimately constrains the exchange of information. xLiMe proposes to extract knowledge from different media channels and languages and relate it to crosslingual crossmedia knowledge bases. By doing this in near realtime we will provide a continuously updated and comprehensive view on knowledge diffusion across media, e.g., from European communities like Catalonia to worldwide content in English.

2 Expected Outcome

Tools and methods developed in xLiMe will be applied in three complementary case studies and evaluated by several business clients and up to 10mio end users. We will

1. augment more than 250 TV channels in different languages with uptodate information from social media and news,
2. monitor brands and the diffusion of opinions across languages and media, and
3. analyse online shop performance with regard to external crosslingual, crossmedia factors, like campaigns for brands and the emergence of public opinions.

By combining speech recognition, natural language processing, machine learning and semantic technologies we will advance key open research problems, by

1. extracting machine-readable know-ledge (entities, sentiment, events, opinions) from multilingual, multimedia and social media content and integrate it with crosslingual, crossmedia knowledge bases,
2. searching this knowledge with structured and unstructured queries in near realtime,
3. monitoring its provenance, con-sumption and diffusion and
4. analysing the interdependency between media exposure and behavioural patterns.

3 Contributions to the ESWC EU Project Networking Session

Since xLiMe has now entered its final year we have a long list of operational components, up to a fully running real-time multimedia processing infrastructure. We intend to present this list to the audience including how they are embedded in use cases. Thus, we can not only provide hands-on experience and screencasts, but also can show more academic evaluation results that should be of interest to researchers in the area of real-time processing of semantic graphs, semantic enrichment of multi-lingual text and images and latent cross-lingual cross-modal representations of media content (video, images, speech, text, knowlege graphs).

We intend to present the inital version of our xLiMe Showcase, which demonstrate the core xLiMe technology with an intuitive interface. Also, we'll show how the 2nd prize winner of the 2015 Semantic Web Challenge works internally and how the audience can make the components work in their projects.

4 Benefits from/for Networking Session

The benefits for the participants of the session will be our offer of plenty of operational xLiMe software components. Plus we can provide expertise and how to implement this in different setups and case studies. We can also provide data sets and best practices in how to evaluate and benchmark similar systems.

Benefits for xLiMe would be to see our technologies being deployed in other projects and potentially being extended and compared to our approaches. Also hearing about new use cases would be beneficial to exploit the results of xLiMe beyond the scope we had so far.

5 Quick Facts

- Start: November 2013; End: October 2016
- Project Coordinator: rettinger@kit.edu
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- Web: xLiMe.eu