

xLiMe: Cross-lingual Cross-media Knowledge Extraction

Achim Rettinger

Karlsruhe Institute of Technology, Germany
rettinger@kit.edu

1 Administrative Facts

Call:	FP7-ICT-2013-10
Funding scheme:	Small and medium scale focused research project (STREP)
Grant agreement no:	611346
Duration:	Nov 2013 to Oct 2016 (36 months)
Partners:	Karlsruhe Institute of Technology, Josef Stefan Institute, University of Trento, Intelligent Software Components, Zattoo Europa, Vico research, Econda
Coordinator:	Achim Rettinger
Website:	www.xlime.eu

2 Introduction

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 cross-lingual cross-media knowledge bases. By doing this in near real-time 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.

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 10M end users. We

will i) augment more than 250 TV channels in different languages with up-to-date information from social media and news, ii) monitor brands and the diffusion of opinions across languages and media, and iii) analyse online shop performance with regard to external cross-lingual, cross media factors, like campaigns for brands and the emergence of public opinions.

The screenshot shows the xLiMe Demo interface. At the top, there is a green header with the text "xLiMe Demo" and a search bar on the right. Below the header, the main content area is divided into several sections. On the left, there is a video player showing a news report with a "Ukraine tensions" overlay. To the right of the video, there is a text block from "CNN International" with a paragraph of text. Below the video and text, there are several small text snippets in a list format. At the bottom right, there are navigation tabs for "Regional", "Victoria", "Oceania", "Australia", "Ukraine", "Europe", "Society", "Government", "Health", and "Conditions_and_Diseases".

By combining speech recognition, natural language processing, machine learning and semantic technologies we will advance key open research problems, by i) extracting machine-readable know-ledge (entities, sentiment, events, opinions) from multi-lingual, multi-media and social media content and integrate it with cross-lingual, cross-media knowledge bases, ii) searching this knowledge with structured and un-structured queries in near real-time, iii) monitoring its provenance, consumption and diffusion and analysing the interdependency between media exposure and behavioural patterns.

The goal of xLiMe 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.

3 Contributions to ESWC2015

We intend to present the general research ideas and use cases and to show demonstrators of automatic enrichment of TV streams and cross-lingual entity search over social media.

4 Networking at ESWC2015

We are interested in any projects related to knowledge extraction, be it automatic speech recognition (like the EU-BRIDGE project), natural language processing (like the XLike project), computer vision, audio annotation or media annotation (like the MediaMixer project). In addition we are interested in projects related to our use cases, like the LinkedTV project or Vista-TV.