ROSETTA
accès multilingue

RObot de Sous-titrage Et Toute Traduction Adaptés

« Robot for Adapted Subtitling and All Translations »

« ROSETTA » project

Press release

Access solutions for audiovisual content
offering automatic multilingual subtitling systems
and experiments with a virtual French Sign Language (LSF) signer,
based on the latest breakthroughs in Artificial Intelligence and Deep Learning.

When we publish or share audiovisual content, it is important to make sure everyone has fair access to it. Subtitles and sign language allow everyone to enjoy audiovisual contents, especially people who are deaf or hard of hearing, allophones learning the language of their host country, or seniors. Subtitles are also very useful for everyone, regardless of their hearing or age condition, when the surrounding noise makes it difficult to listen, or when the video is spoken in a foreign language.

ROSETTA is a public-private research project labelled by Cap Digital, the French Hub for digital and ecological transformation, and co-financed by the public French investment bank Bpifrance under the "Programme Investissements d'Avenir" (Future Investments Programme). The ROSETTA project aims to make audiovisual content of all types more accessible to users, by developing automatic systems for the production of multilingual subtitles, and by offering, on an exploratory basis, a translation into French sign language for journalistic content, using an animated 3D virtual signer.

ROSETTA has 3 targets:

- End-users, including people who are deaf or hard of hearing, people who are learning a foreign language or who want to access content in a language they understand better.
- Broadcasters and production companies producing video content, especially those that aim at producing subtitles for a large part of their content.
- Administrations, training organizations, digital media and communications services, and all video content producers wishing to make their content accessible to a larger audience.

How artificial intelligence technologies help and allow the development of the ROSETTA project:

ROSETTA produces models for automatic multilingual subtitling, and generates French Sign Language animations for audiovisual content using the latest developments of artificial intelligence, including Deep Learning.

Powered by Neural Machine Translation, the project evaluates the automation of the whole subtitle production chain in various languages, French, English, Spanish, Portuguese, Italian and Chinese, and for audiovisual content in domains as diverse as entertainment, news and training.

Fine-grained recordings of French Sign Language data through Motion Capture associated to a multi-linear representation of sign language also enable to generate French Sign Language animations covering news titles, in order one day to offer access to news content beyond subtitles, directly in sign language.

The three outlooks for the ROSETTA project are:

1. To provide greater access to audiovisual content of all types to a wider population.

2. To automate the subtitle production chain and increase the productivity for those involved in the production and broadcasting of audiovisual content.
3. To support the transformation of the accessibility market for international video content.

Consortium members and other participants:

Consortium members		
SYSTRAN	**SME**	
france.tv access	Large Enterprise	
MOCAPLAB	SME	
LIMSI/CNRS	Public research laboratory	
LUTIN/EPHE	Public research laboratory	
Co-financer labelizer and subcontractor		
BpiFrance	Co-financer of the project	
Cap Digital	Project labelizer	
Holken Consultants & Partners	Subcontractor of EPHE/Lutin Userlab and LISN/CNRS	

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