

The Sign Language Avatar Project

Austria – signtime GmbH: SiMAX, the Sign Language Avatar Project

SUMMARY OF PROJECT

SiMAX is a software system that combines several highly sophisticated ICT technologies: a real-time 3D-engine, animation/clip exporter, animation builder, a “learning” database, a clip database, a sign database, a translation engine based on statistical methods, a translator interface, an emotion editor, and a video converter. The aim of the project is to develop a quicker and more affordable solution for translation into sign language by using an animated avatar. Thus, the whole world of information – news, internet, movies etc. – will finally be accessible to deaf and hearing impaired people.

QUOTE:

“SiMAX changes the world of deaf people by making information accessible to them.”

—Mr. Georg Tschare, CEO, signtime

FACTS & FIGURES

- Because of SiMAX, several hundred deaf persons in Austria were able to view information videos in sign language on voting in the 2015 Vienna elections.
- Approximately 200 persons have used animated signs to learn sign language in courses since summer 2015.
- Worldwide, more than 10,000 people have played SiGAME, which is the first game app in sign language.

PROBLEMS TARGETED

Currently, most information - both written and oral – is not accessible to many deaf people as 80% of them are functional illiterate. SiMAX is able to translate a large amount of information into sign language faster than conventional video production, and therefore it is also more cost-effective. Thus, we expect a high demand especially from public authorities.

SOLUTION & METHODOLOGY

SiMAX is a semi-automatic system designed to translate text into sign language by combining technology from animation pictures, the computer gaming industry, and computer-aided translation services. As a fully automatic translation is not possible, the translation process is managed by a deaf person who is preferably a qualified interpreter or has an excellent command of sign language. As

such, this system also creates high-quality jobs for deaf people. The translation process is conducted by a person who is knowledgeable in sign language, which includes people with a hearing impairment, and as such, this system also creates high-quality jobs for this group. Because a fully automatic translation is not possible, there is a need for a human interpreter. However, there are exceptions, such as the standardized texts that are used for service announcements on public transportation systems. SiMAX can be used for translating these announcements in public areas, including security alerts. The system follows the natural grammar principles while developing the sign language avatar. Mimic has a grammar function in sign language (e.g., raised eyebrows symbolize an interrogative sentence), which the avatar is capable of displaying. The figure shows emotion and can move its head and upper body fluently. The avatar is exchangeable according to the target group e. g. for a children's broadcast the avatar has the appearance of a child. A "learning machine" is integrated into the system, which saves all previously performed translations and keeps them ready as proposals for future translations.

OUTLOOK & TRANSFERABILITY

SiMAX will start by translation of TV and internet content in big markets like the US and Germany. Once established there it will also expand to smaller markets like Switzerland and Portugal. Then it will also offer special applications like the translation of package leaflets of medicines. For deaf people the system will be available for free as web application to use it as additional communication tool for private purposes.

Photo: Yes

Life story: Yes

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