

Multilingual Applications for Positive Social Impact

Improving Access to Medical Care, Media & Education

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BabelDr / Spoken Language Translation for Dialogues in the Medical Domain

in collaboration with the Geneva University Hospitals (HUG)



Designed to allow doctors to perform **diagnostic interviews with allophone patients** in emergency settings where no interpreter is available, BabelDr's main focus is on **precision** and **less-resourced languages**.

The system combines speech recognition (ASR) and neural models to map spoken variations to more than 10,000 core sentences that were humanly pre-translated into 9 languages: Albanian, Arabic, Dari, Farsi, Russian, Spanish, Tigrinya, Ukrainian and Swiss French Sign Language.



Reference: A speech-enabled fixed-phrase translator for healthcare accessibility, Bouillon P., Gerlach J., Mutal J., Tsourakis N. & Spechbach H., in: Proceedings of the 1st Workshop on NLP for Positive Impact, 2021.

Funding: Projet Mimosa, Fondation privée des HUG and Prix Innogap.



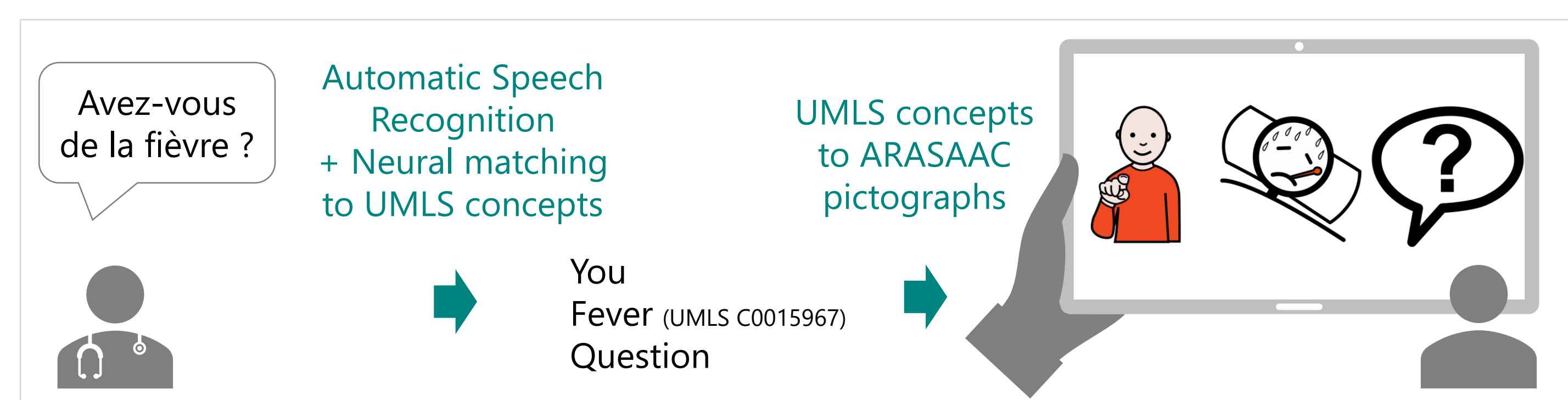
PRO PICTO / Augmentative and Alternative Communication (AAC)

in collaboration with the Grenoble Informatics Laboratory (LIG) and the Geneva University Hospitals (HUG)



The overall goal of PRO PICTO (French acronym standing for PROjection du langage Oral vers des unités PICTOgraphiques) is to create **Speech-to-Pictograph translation systems** enabling a conversion from a French speech input into pictograph sequences, and thus to enhance communication access **for allophones or people with cognitive impairments**.

The first aim is to implement these devices within emergency medical settings. Later, they will be extended to other domains and environments.



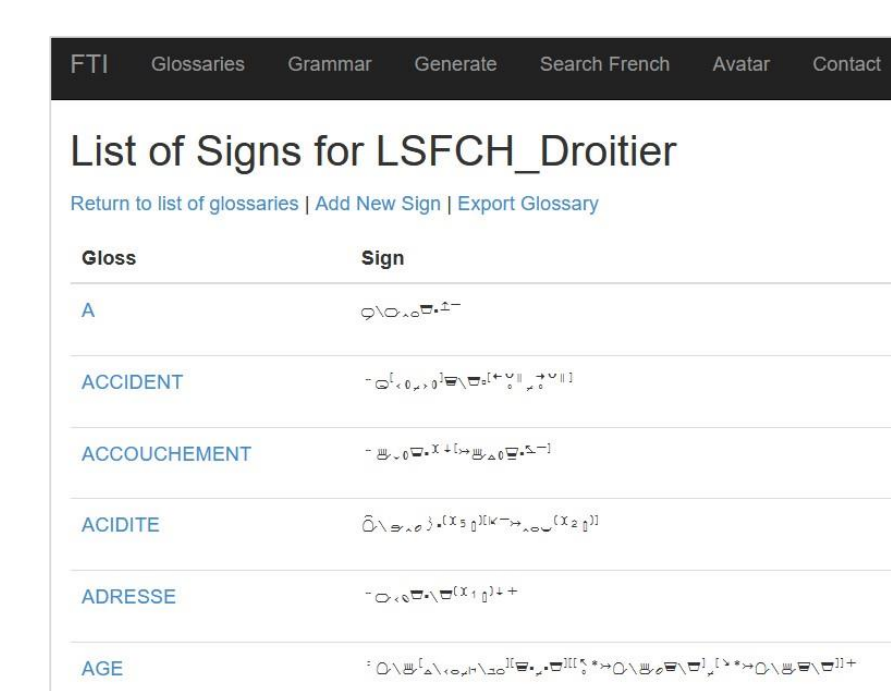
Reference: Une chaîne de traitements pour la simplification automatique de la parole et sa traduction automatique vers des pictogrammes, Macaire, C., Ormaechea Grijalba, L. & Pupier, A., in: 29e conférence sur le Traitement Automatique des Langues Naturelles (TALN/RÉCITAL), 2022.

Funding: French National Research Agency (ANR) and Swiss National Science Foundation (SNSF) bilateral project.



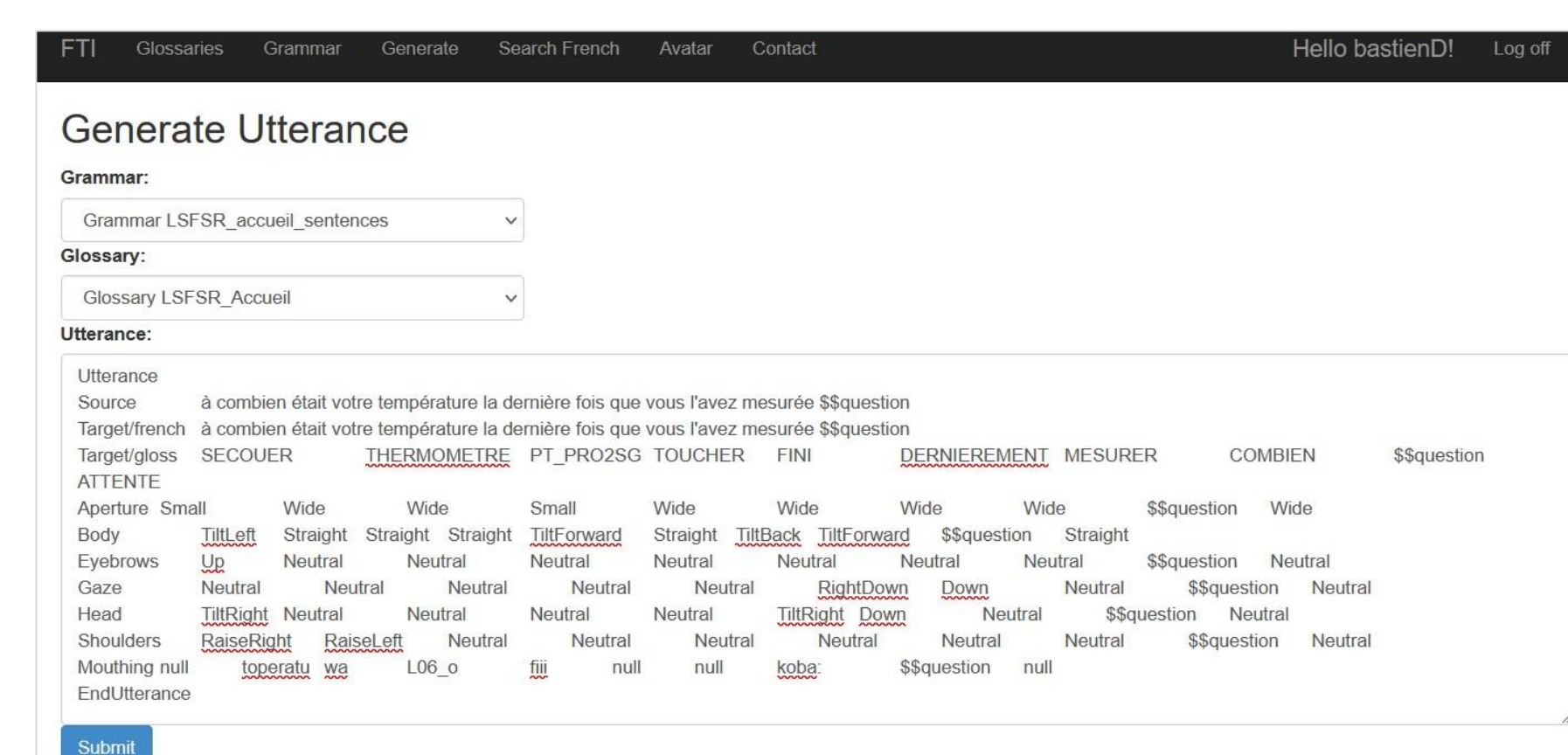
SigLa / A Platform for Development of Sign Language Avatar Animations

The SigLa platform is designed to facilitate development of **SiGML** (Signing Gesture Mark-up Language) resources used for the animation of **JASigning avatars**.



The SiGML is derived from sign tables, generated from glossaries describing manual signs in HamNoSys notation and grammar rules mapping sentences to their sign language representations.

SiGML resources are used to animate the signing avatars in several projects, e.g. BabelDr and UNI-ACCESS.



Reference: SigLa - Une plateforme de développement d'animations en langue des signes, David, B., Mutal, J., Strasly, I., Gerlach, J., & Bouillon, P., in: Journée d'étude Technologies du Langage Humain et Accès Interactif à l'Information (JAI2022), Paris, 2022.

Funding: Swissuniversities.



UNI-ACCESS / Accessibility of University Websites

in collaboration with the HES-SO Valais-Wallis



This project aims to support and enhance accessibility in tertiary education. More specifically, it proposes specific linguistic and technical solutions to integrate **easy-to-understand language** and **sign language** into university websites in French.

References: Developing a New Swiss Research Centre for Barrier-Free Communication [Chapitre d'actes], Bouillon, P., Rodríguez Vázquez, S., & Strasly, I., in: Proceedings of the 21st Annual Conference of the European Association for Machine Translation (Vol. , p. 347), 2018.

How is Web Content in Easy Language Localised? Current Trends and Open Questions, Rodríguez Vázquez, S., Torres-del-Rey, J., & Morado Vázquez, L., in International Conference on Translation and Interpreting of Specialized Discourses: Theoretical and Practical Approaches to Accessibility, Málaga, 2021.

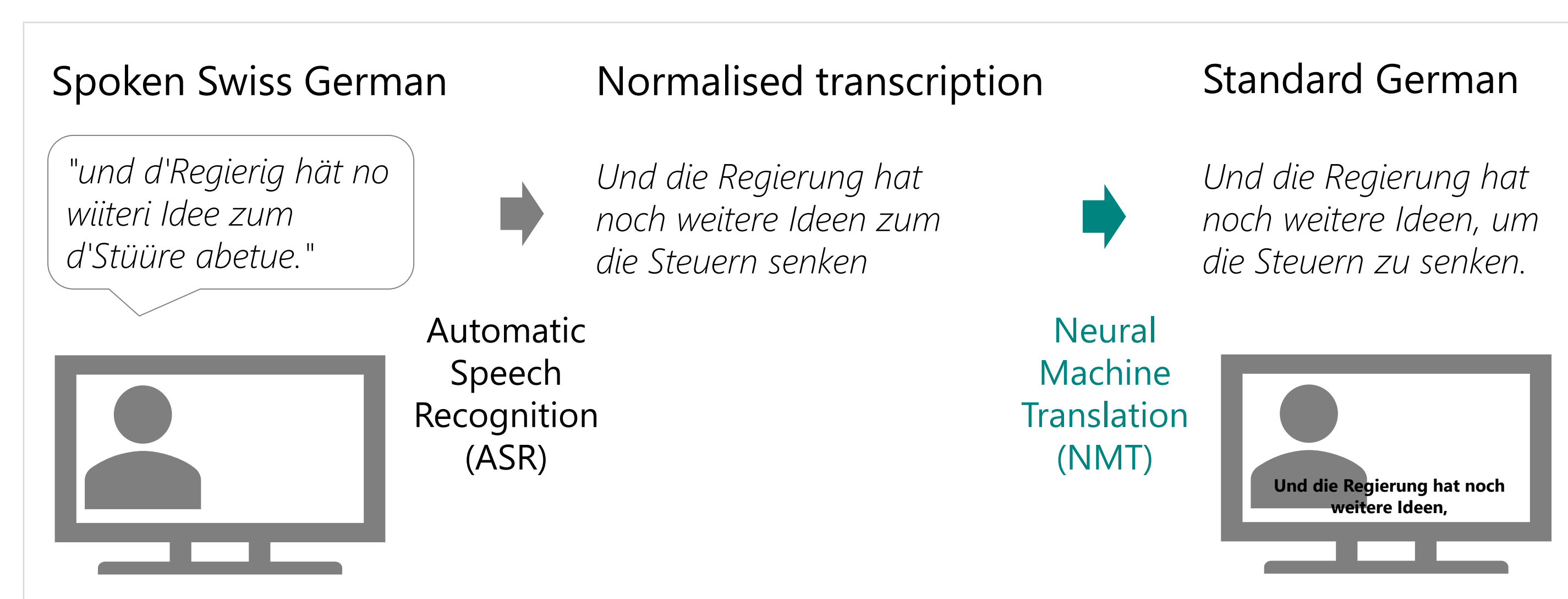
Funding: Swissuniversities.

PASSAGE / Automatic Standard German subtitling of Swiss German Media Content

in collaboration with Schweizer Radio und Fernsehen (SRF) and recapp



This project aims to **make television more accessible** through **automatic speech translation** to produce subtitles.



Reference: The PASSAGE project : Standard German Subtitling of Swiss German TV content, Bouillon P., Gerlach J., Mutal J. & Starlander, M., in: Proceedings of the 23rd Annual Conference of the European Association for Machine Translation, pp. 301-302, Ghent, 2022.

Funding: IMI (Initiative for media innovation).

