Combining the user friendliness of SignWriting with the precision of linguistic parameters

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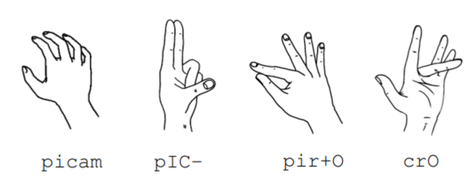
SignWriting

Phonetic (Universal, Lossless) + **Iconic** (Intuitive, Expressive) = **User-friendly**

Signotation

Phonological (Significant, Parametric) + **Formal** (Well defined, NLP-ready) = **Precise**



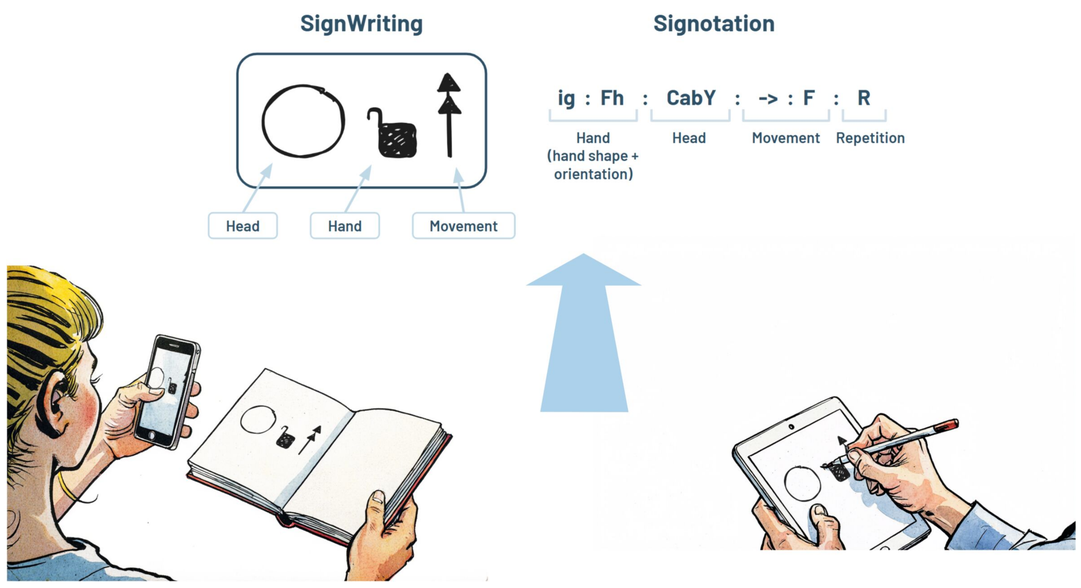
TraduSE

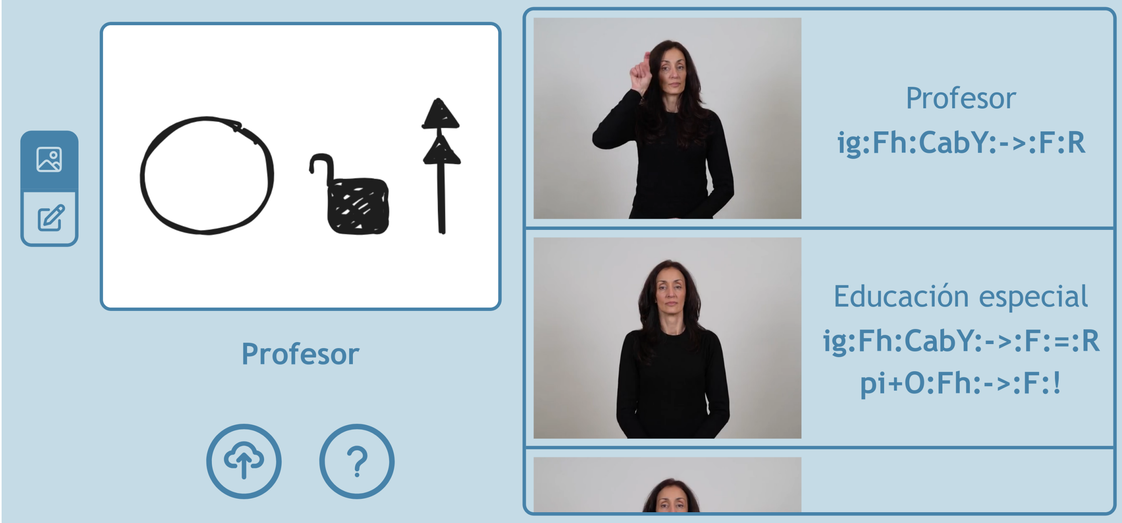
Try me!

TraduSE (Translating SignWriting) is a progressive web app developed as a bachelor's thesis. The app converts images of SignWriting (handwritten, or captured) into a parametric representation (Signotation) which is then used to search for matching signs in the Spanish Sign Language Signary.

Due to the intuitiveness of SignWriting, only a small learning curve is needed to be able to transcribe basic information. The hands, body and movements are transcribed in a very iconic way, allowing users with imperfect knowledge to query the system. SignWriting can be directly drawn in the app, or scanned via a device camera.

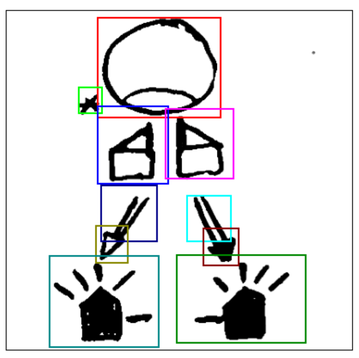
The app converts the SignWriting to Signotation, a parametric system in the style of Stokoe notation or HamNoSys. This coding represents the different sign parameters independently, allowing incomplete or imperfect queries. This helps in finding similar signs, or for example uninflected forms of user searches.





Screen capture of the app, showing the input SignWriting and the list of recovered videos.

VisSE



CLASS	SHAPE	VAR	ROT	REF
HEAD	chin	VAR	ROT	REF
DIAC	touch	VAR	ROT	REF
HAND	picamr+	w	E	n
HAND	picamr+	w	W	y
STEM	d	VAR	SE	REF
ARRO	b	VAR	SE	REF
HAND	PICAM	hb	N	y
STEM	d	VAR	NE	REF
ARRO	w	VAR	SW	REF
HAND	PICAM	hb	N	n

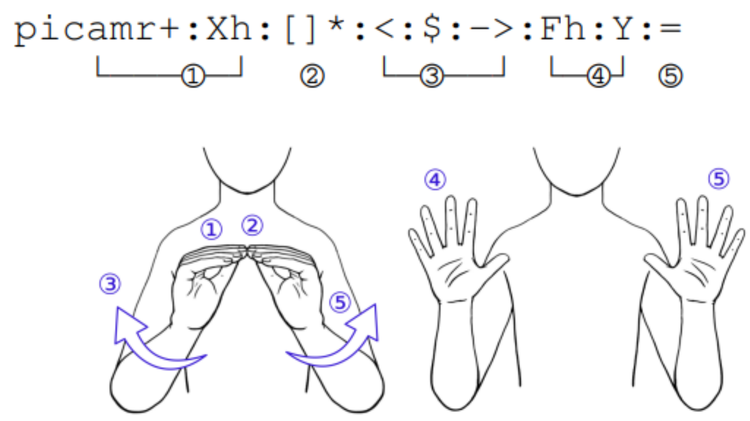
Project VisSE ("Automatic SignWriting Recognition", *IEEE Access*, 2023) implements an artificial vision pipeline to decompose SignWriting into meaningful units.

https://www.ucm.es/visse

TraduSE: The missing link

Both SignWriting and systems based on linguistic parameters contain all the information needed, they just need translation. TraduSE uses a purpose-built module to convert the graphical information encoded in SignWriting logograms into the analytical parameters of Signotation.

SSL Signary



The Spanish Sign Language Signary contains videos transcribed in Signotation and indexed in an ElasticSearch database with a custom tokenizer.

https://griffos.filol.ucm.es/signario

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