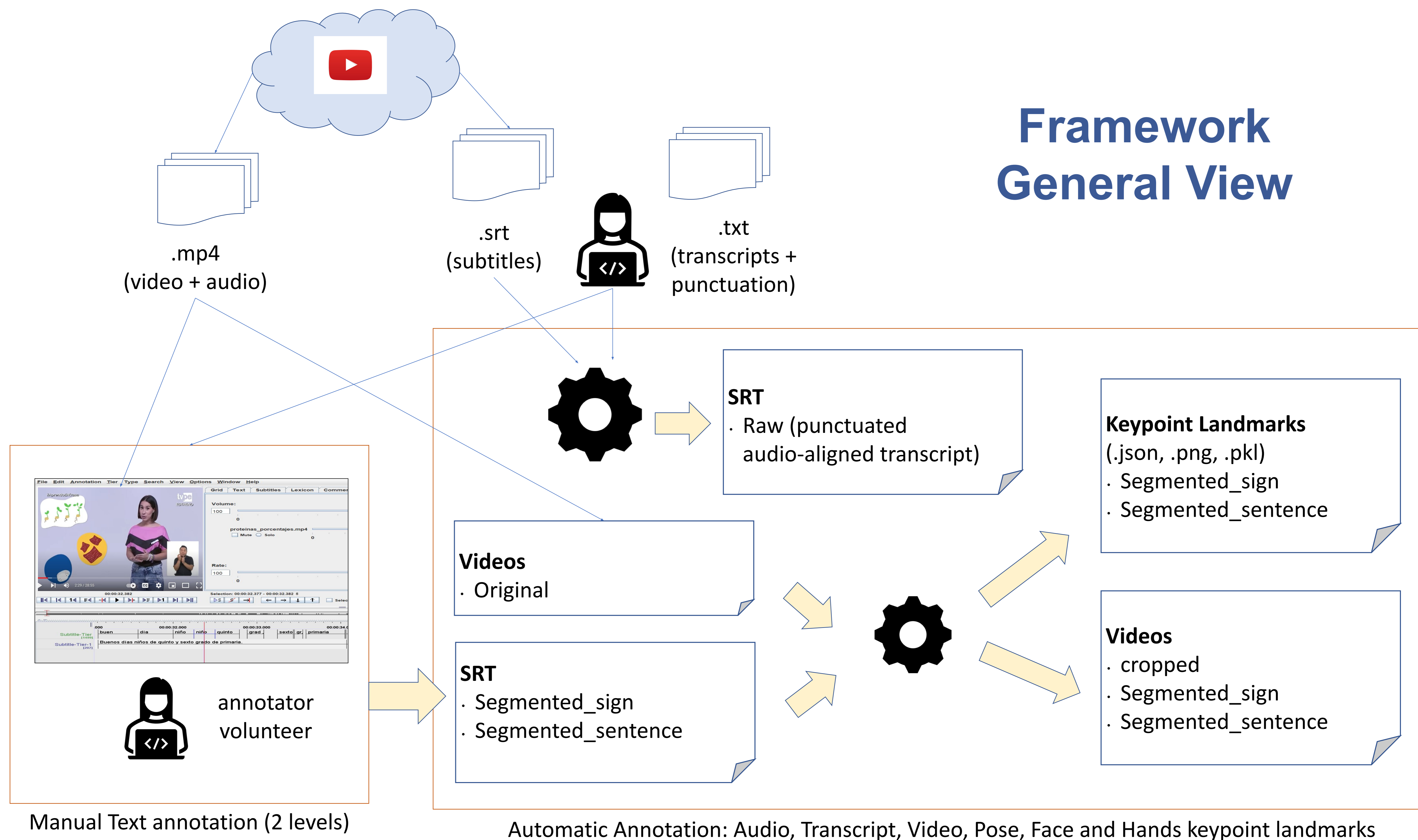


PeruSIL: A Framework to Build a Continuous Peruvian Sign Language Interpretation Dataset



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Our contribution	
•	Design a Framework to annotate sign language
•	Release the first annotated LSP multi-modal interpretation dataset (AEC)
•	Evaluate the annotation done by hearing people by training a sign language recognition model

Framework details	
•	Annotation level: Sign (1st tier) and Sentence (2nd tier)
•	Annotation convention based on the glossing system but simplified
•	Pipeline to combine manual and automatic multimodal annotation

Convention	
1	1st tier: one sign is assigned with the closest word 2nd tier: signs is assigned with its respective word
2	Both tiers: in lowercase except proper nouns and entities
3	1st tier: Fingerspelling annotated separated by hyphen
4	1st tier: Standardize words to masculine gender and singular
5	1st tier: Verbs assign in the present tense with the sign of their verb tense
6	Both tiers: Not identified sign annotated as "NNN"

Model results

5 classes classification	
F1 micro (AEC) In-domain	F1 micro (PUCP-DGI-156) Out-of-domain
80.3%	52.4%

Note: F1 micro result in PUCP-DGI-156 dataset is less than our baseline (53.2%) due to dataset imbalance.

Reference:

- De Coster, M., Van Herreweghe, M., and Dambre, J. (2021). Isolated sign recognition from rgb video using pose flow and self-attention. In Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition, pages 3441–3450.
- Rodriguez Mondoñedo, Miguel and Arnaiz Fernandez-Concha, Alexandra. (2022). Archivos de videos en mp4. Pontificia Universidad Católica del Perú.
- Rodriguez Mondoñedo, Miguel and Arnaiz, Alexandra. (2015). Repositorio Lengua de Señas Peruana.
- Lugaresi, C., Tang, J., Nash, H., McClanahan, C., Uboweja, E., Hays, M., Zhang, F., Chang, C.-L., Yong, M. G., Lee, J., Chang, W.-T., Hua, W., Georg, M., and Grundmann, M. (2019). Mediapipe: A framework for building perception pipelines.

Check Our Repository

<https://github.com/gissemani/PeruvianSignLanguage>



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