

# Bricolages of agri-equipment

## Can YouTube farmers' videos help understand their needs?

Sboui Oumayma <sup>☆☆</sup>, **Kefi Souha** <sup>★\*</sup>,  
Dubois J.-F. Michel <sup>★</sup>, Rizzo Davide <sup>★</sup>  
UniLaSalle, campus de Beauvais (France)

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<sup>☆☆</sup> École nationale d'électronique et des télécommunications de Sfax (Enet'com), Tunisie | [oumayma.sboui@unilasalle.fr](mailto:oumayma.sboui@unilasalle.fr)

<sup>★</sup> Presenter [souha.kefi@unilasalle.fr](mailto:souha.kefi@unilasalle.fr)

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### CONTEXT

Technical advances in **agricultural machinery** are expected to contribute to improving farmers' working conditions and meet societal demands. **Bricolage of agricultural equipment** by farmers could provide relevant insights. We explored **YouTube as a source** for data mining.

### Agri-YouTubers

New generation of farmers conquering social media and more specifically: Youtube

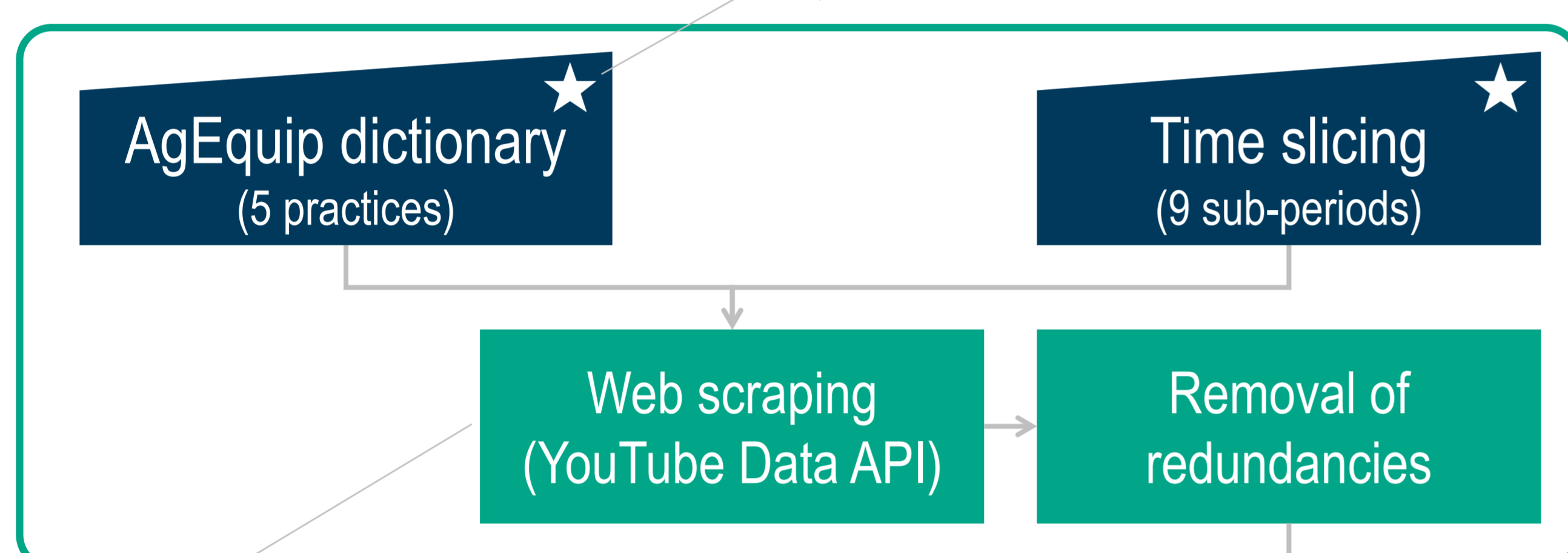
### Bricolage

Non-structural changes of settings allowing the adaptation of equipment functioning to farmer's needs.

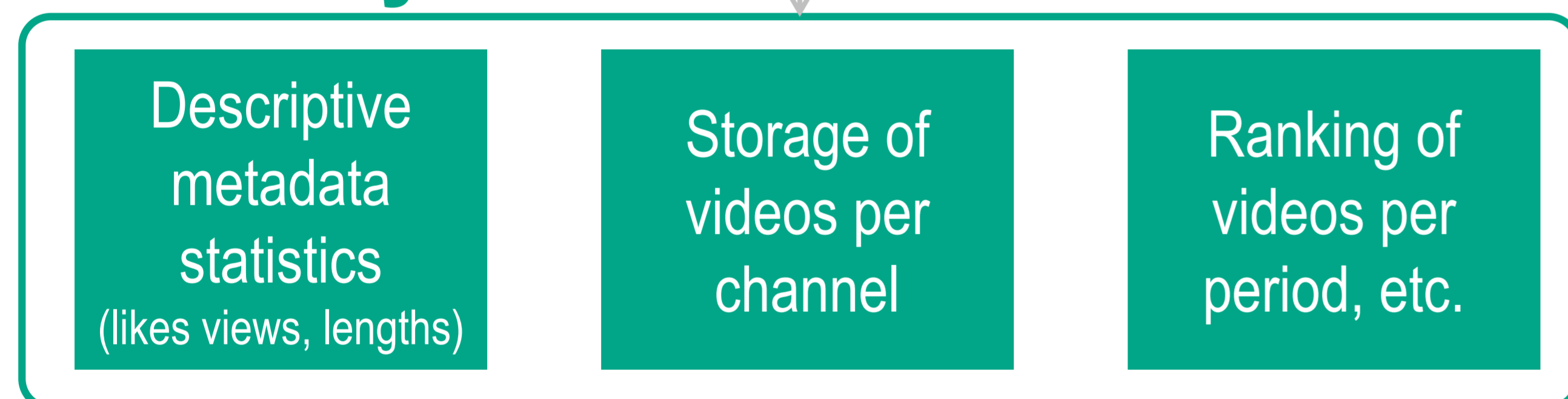
### DATA MINING METHOD

#### 1. Collection

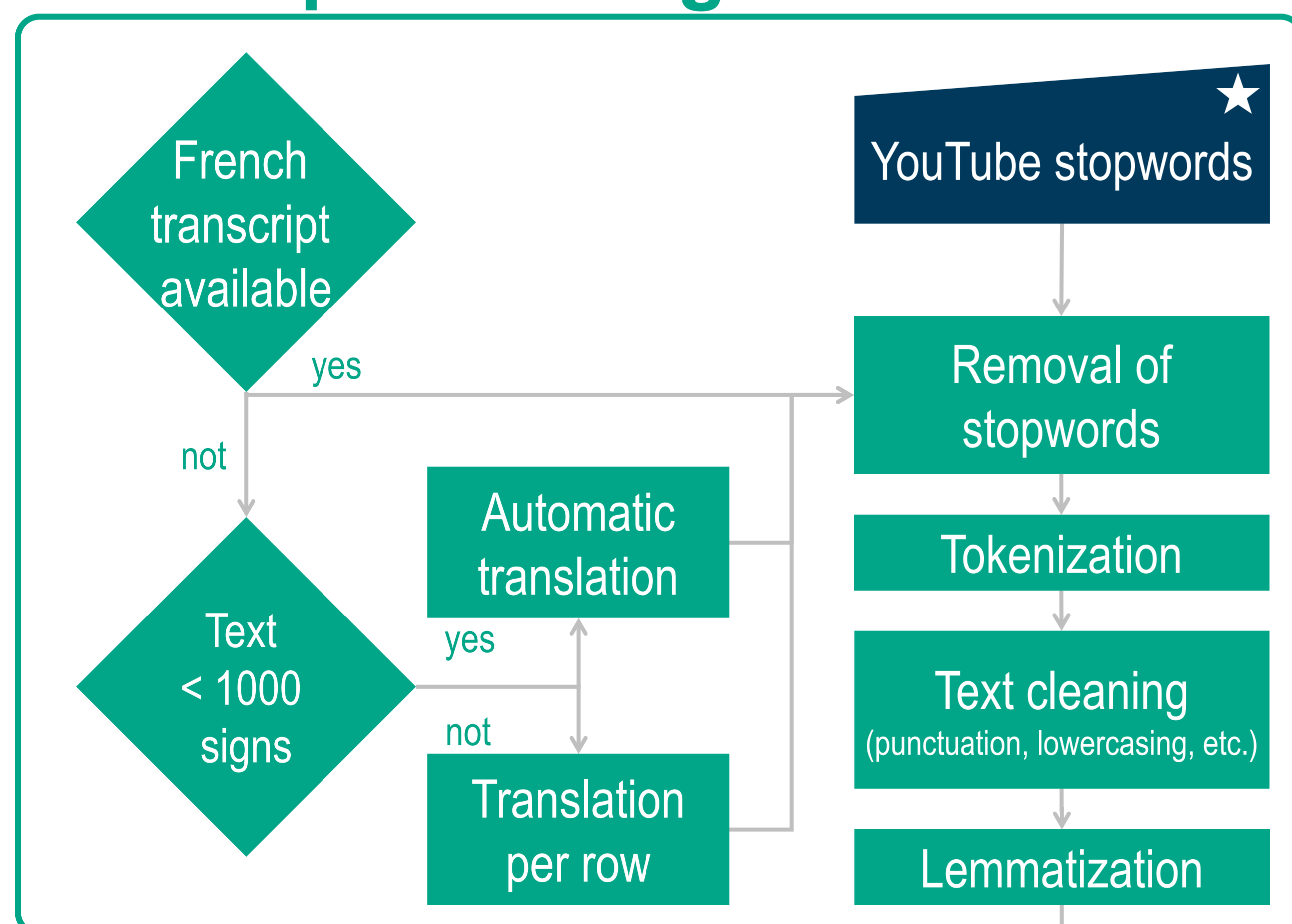
<sup>★</sup> Specific method innovations



#### 2. Analysis



#### 3. Pre-processing



#### 4. Modelling

Comparison of natural language programming (NLP) techniques to identify emerging topics

**Top2vec**  
Grouping video per agri-equipment

**BERTopic**  
Visualization of terms per topic, similarity matrix, etc.

### Our aim

To find how farmers modify agricultural equipment to adapt it to their farming needs.

### RESULTS

Using data mining methods, the videos' metadata and translated transcripts were analyzed. Topics related to agri-equipment bricolage were related to the needs expressed by the farmers.

Example of first topic extraction



Example of bricolage-need associations

Agri-equip.	Bricolage	Need
Precision seeder	A foam strip is added to the rubber washers along the edge of the plates.	Minimize multiple seeds to not stick to the same holes.
Harvester	Addition of a coil at the level of the cut.	Better precision

The detailed results are accessible on a temporary interactive website: <http://oumai.pythonanywhere.com/>

### PERSPECTIVES

The proposed analytical solution will contribute to enhance an in-depth survey with a sample of farmers to identify the reasons underpinning the bricolages, to improve the understanding of farmers' needs.

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