

# **Active learning in a collaborative annotation framework for multimodal documents**

Mateusz Budnik

**Supervisors:** Georges Quénot and Laurent Besacier

**Research groups:** MRIM and GETALP

# Context

- **Camomile Project** - Collaborative Annotation of multi-MOdal, Multi-Lingual and multi-mEdia documents.
- Dealing with mulimodal, multilingual and multimedia (3M) data
  - TV shows
- Focusing on semi-supervised and unsupervised learning techniques for active learning



PREMIERE  
EDITION

**NATHALIE KOSCIUSKO-MORIZET**  
MINISTRE DE L'ÉCOLOGIE

CRISE DE LA  
DETTE

Berlin n'exclut pas "un dépôt de bilan en bonne et due forme de la Grèce" si nécessaire (ministre des Finances).



PREMIERE  
EDITION

**NATHALIE KOSCIUSKO-MORIZET**  
MINISTRE DE L'ÉCOLOGIE

CRISE DE LA  
DETTE

Berlin n'exclut pas "un dépôt de bilan en bonne et due forme de la Grèce" si nécessaire (ministre des Finances).



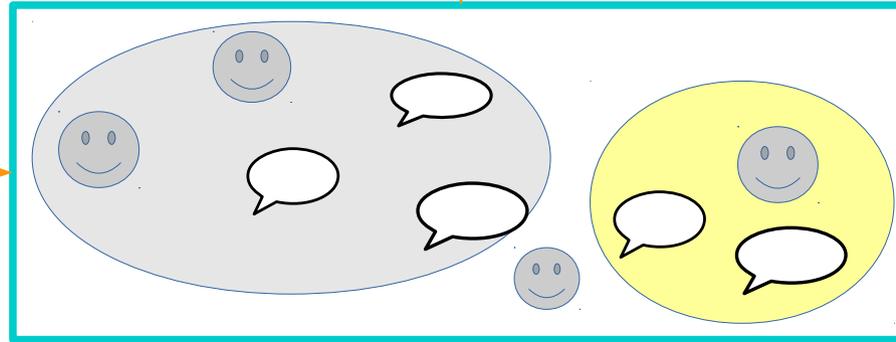
PREMIERE  
EDITION

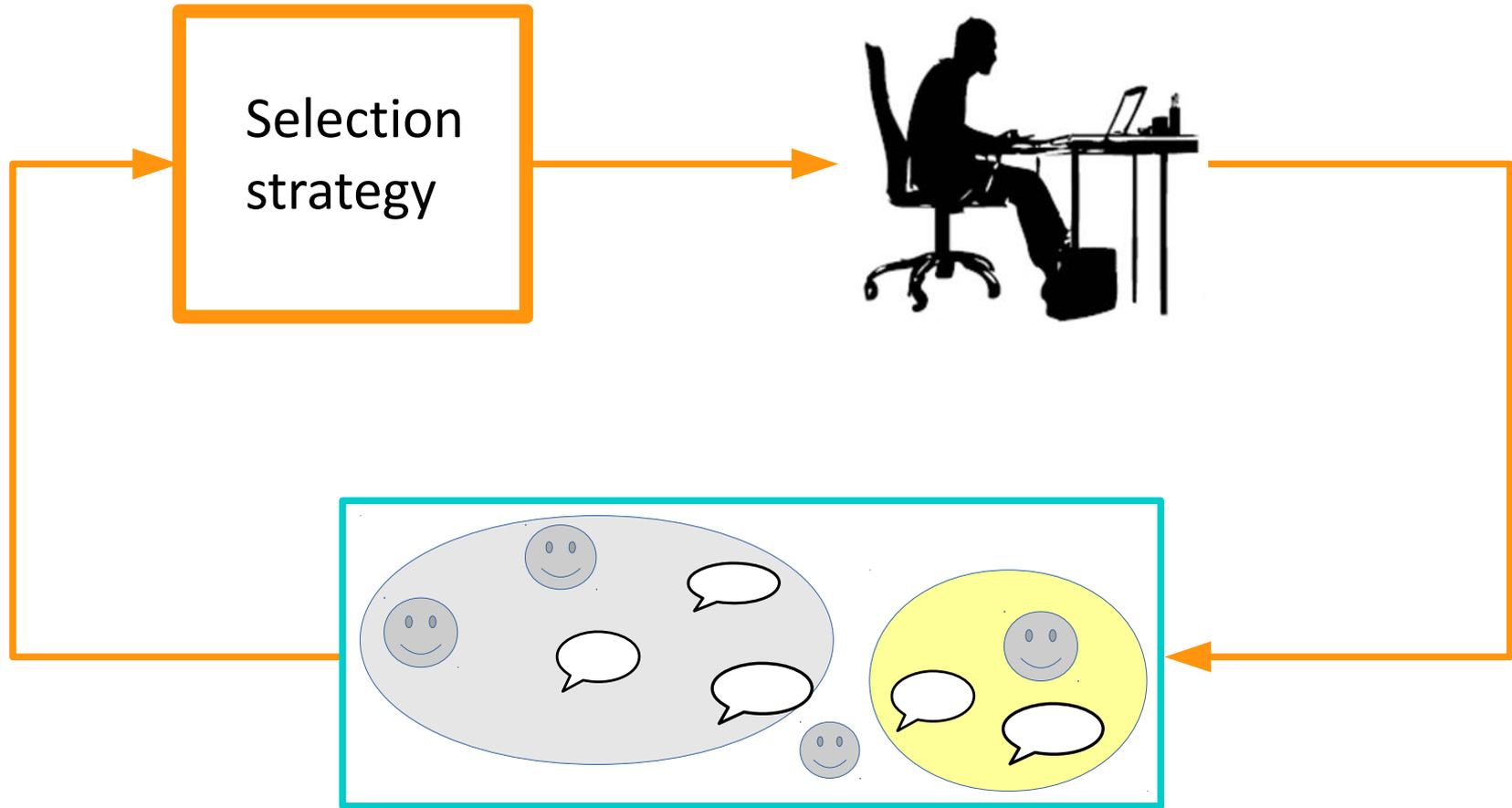
**NATHALIE KOSCIUSKO-MORIZET**  
MINISTRE DE L'ÉCOLOGIE

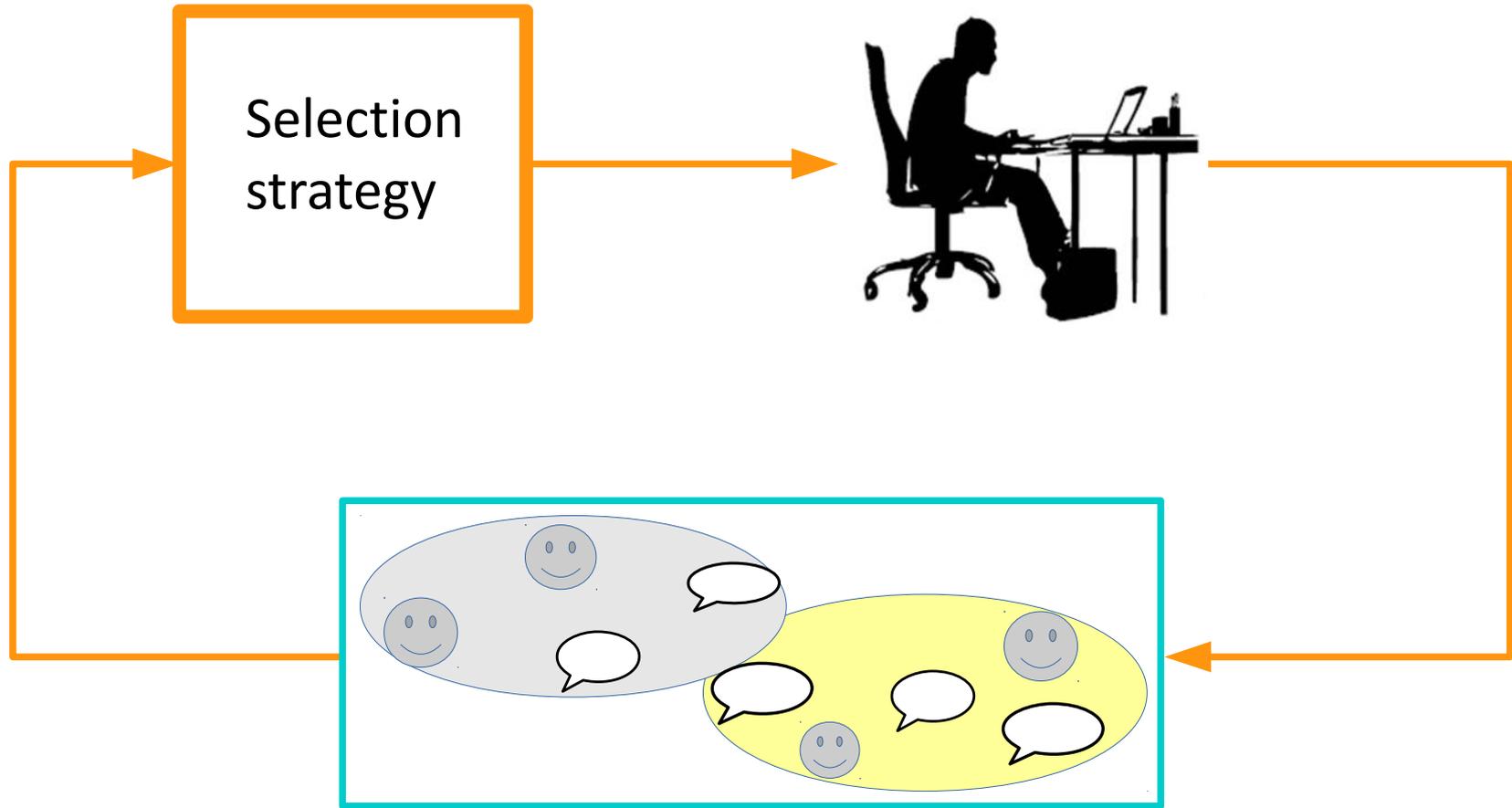
CRISE DE LA  
DETTE

Berlin n'exclut pas "un dépôt de bilan en bonne et due forme de la Grèce" si nécessaire (ministre des Finances).









# Selection strategies

- Unsupervised:
  - Based on cluster structure, e.g. size, purity
  - Characteristics of individual tracks
  - Local linear embedding based selection
- Supervised:
  - Based on the models for particular modalities (e.g. GMM for audio, SVM for image)
  - Selection by committee, relevance

# Constraints

- Computational time – can it work on-line? (job scheduling, etc.) What can be computed off-line?
- Undefined number of persons – number of classes not constant, new can appear.
- Experiments with real annotators – taking the human factor into account.