Artificial Intelligence for Legislative domain: neuro-symbolic AI, symbolic AI and LLM.

The neuro-symbolic AI is a new trend where the semantic web technologies and the non-symbolic AI are mixed for mitigating critical issues like overfitting and underfitting, lack of context, poverty of explicability of the results. We want to investigate a new approach including neuro-symbolic, symbolic AI and Large Language Model (e.g., Bard) applied in the legislative domain.

In this project we want to integrate the existing state of the art in the AI and Law community with the Neuro-Symbolic approach for creating use-cases applied to

i) Parliamentary documents (e.g., LLM applied to the parliamentary documents like the transcripts, committee minutes, dossier);
ii) Legislative process (e.g., legal drafting, simulation of scenarios for the legislative simplification);
iii) Socio-legal needs monitoring (e.g., detecting needs anticipating the problems);
iv) Evaluate effectiveness of the legislation in the light of the policies (e.g., ex-post analysis of the effectiveness of the legislation).

We follow the objective of the HyperModeLex ERC project.

The steps of the project are the following:

1. Analysis of the state of the art and integration of different disciplines literature;
2. Design use-case specifications and selection of the best Neuro-Symbolic approach;
3. Implement some experiments using the parliamentary documents, legislation;
4. Visualizaton techniques: comparative and critical analysis.
5. Testing, evaluate and validate the results;
6. Interpret using the legal disciplines methodology.

The project has to produce technical report, coding well documented and stored in gitlab repo of ALMA-AI center, at least one paper for international conference.