AI-RENELLA TEAM

Marinella Quaranta

Ph.D Candidate
“Law, Science and Technology”
Univesity of Bologna
University of Turin

marinella.quaranta@unito.it

Alessandro Bucci

Master Student in
“Computer Science Specialized in Artificial Intelligence”
University of Pisa

a.bucci12@studenti.unipi.it

COMPL-AI

AN EASY SOLUTION FOR A COMPLEX MATTER

OUTINE

1.THE IDEA

The global AI market is projected to grow annually by 15.8 % over the 2024-2030 period to $739 (€680) billion in 2030. EU providers are prone to adopt AI technologies but they have to be careful that their functions are **compliant** with what is prescribed by the law, or else they end up **being excluded** from the EU market.

What tool could the most fit their need for compliace, specificity and semplicity in undertanding requirements? We created a platform studied to be easily understandable, explainable and implementable once further documents from the Commission and EU Member State will be established with further technical specification and procedures: the **COMPL-AI platform.**

2.TECHNOLOGY CHOICE

Decision tree

To map AI classifications and obligations, we have developed a **Decision Tree-Based framework to build a compliance path**. This pathway does not only include the last AI Act, but also interpretations of previous versions, taking into account the ratio behind modifications, deletions, and new features.

Defeasible Deontic Logic

To represent the relationships between norms, our methodology incorporates **Defeasible Deontic Logic, a formal framework that combines deontic logic which addresses obligations, permissions, and prohibitions, with a logic reasoning allowing for exceptions and the overriding of rules.** To integrate it with the application we used Clingo, a library for solving logic-based problems using Answer Set Programming (ASP).

Flask - Python 3

To develop the application, Python 3 and Flask were chosen. **Python was chosen for its versatility and extensive libraries,** enabling efficient development and integration with tools like *Clingo* whilst **Flask, a lightweight and flexible web framework**, was used for rapid creation of web applications. Together, they provide a simple yet powerful platform for building COMPL-AI.

PROJECT OUTCOME

A multi-choice platform that directly gives to the AI provider informations, indications and clarifications related to the AI classification and obligations.

It does not employ the use of LLMs or other Generative AI systems. It is a rule based system which makes it fully **explainable, lightweight and traceable.**

It gives a structure to the AI Act that is fully implementable. **Most of obligations set by the AI Act will need European and national implementation**, and, with the COMPL-AI framework, each and every document can be implement by specify further already existing compliance path.

ADAPTED TO THE CHALLENGE

COMPL-AI

- We introduced a MDR specific related question to show Laura different obligations resulting if her AI is a medical device(the platform is **easily implemented** with new features from MDR)

- We introduced summarized version of articles, so Laura can rapidly check (the platform gives **both summarized and complete versions** of the Articles).

- The platform also **prints the solutions**, so Laura can check on different obligations and decide.

- The platform assigns the **tasks based on organization roles**: so Laura knows who has to do what.

LeDS
Legality Attentive Data Scientists

COMPL-AI

PROJECT OUTCOME

LET'S GO 

PROJECT OUTCOME

- **Is it Innovative?**

YES, it is different from other compliance forms as it is built to be implemented for each change\additional feature.

- **Is it Reliable?**

YES, it is based on an updated interpretation of the AI act and can be updated time by time.

- **Is it Usable?**

YES, it is user-friendly, with a simple and clear interface.

- **Is it Resource-efficient?**

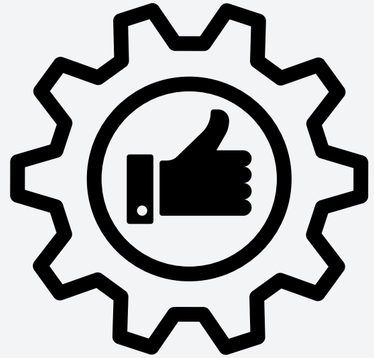
YES, by not using LLM, it reduces its environmental impact, and data\computational power used are minimal.

- **The output is useful and legally accurate?**

YES, the output references Articles of the AI Act, in some case simplyfied to be more clear and understandable for any provider.

LIMITATIONS

- AI assessment without AI compliance tool
- Enforcement start in 2nd February 2025 it might change AI framework regulation and additional feature might come.



However

FUTURE WORKS

- We would like to further deploy this tool and use it to check compliance for AI system on specific required documents. In this way, AI providers could directly check themselves without seeking for compliance advisors.
- As it is rule-based, this model is scalable.

THANK'S FOR YOUR ATTENTION!

Marinella Quaranta

Ph.D Candidate “Law, Science and Technology”
Univesity of Bologna -University of Turin

marinella.quaranta@unito.it

Alessandro Bucci

Master Student in “Computer Science Specialized in Artificial Intelligence” University of Pisa

a.bucci12@studenti.unipi.it