Development of a computational system to determine ESCO competences associated to training offers

Student: Artur Correia Romão

Supervisor: António Neves

Co-supervisors: Fabianne Ribeiro

Summary: The business sector currently faces a challenge in linking a training offer (by its title, description or objectives) to the skills acquired at the time of its completion, which is a barrier in the process of choosing job offers by workers and selecting candidates by companies. In order to fight this, the European Union recently made available a database containing the multilingual taxonomy of European qualifications, competences and occupations (ESCO) which aims to be the fundamental reference for professional integration and mobility within Europe.
Therefore, the objective of this dissertation is to develop a computational system capable of processing the training offers' information coming from UA courses' Pedagogical Dossiers (DPUCs) and to map them to ESCO competences.

Work done / results

- Defining the objectives of the dissertation by investigating about ESCO, its goal towards professional integration and mobility within Europe and how people and organizations may benefit from using it
- Reading of ESCO's Quick Start Guide documentation
- Investigate on how to use ESCO/Read ESCO API documentation
- Investigate about similar taxonomies that could have different and interesting features
- Study how UA's DPUCs are organized
- Search of LLM and NLP frameworks that could be helpful to process DPUCs information (finding keywords to match ESCO competences)
- Installing ESCO API and making some tests on micro-credentials and DPUCs
- Concluded that ESCO API itself is not prepared to receive raw information from UA's DPUCs

Future work / challenges

- Make some more tests with other DPUCs to check if the expected output is valuable and makes sense
- Choosing a proper LLM framework to process the information coming from DPUCs and obtaining valuable keywords before querying in ESCO API
- Starting making tests with the LLM framework