



Finanziato dall'Unione
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NextGenerationEU



Università
degli Studi di
Messina



Brief description of the project

❖ **Company name:** Fire Spa

❖ **Title:**

Artificial intelligence techniques for decision support in credit management

❖ **Description of the scientific and educational objective:**

The project is part of the national initiatives aimed at fostering effective interaction between the world of university research and the world of production in order to support and improve the propensity for business innovation.

The institutional customers that Fire addresses are the main companies in the banking, financial and utility world that operate throughout the country, a market in which it is no longer enough to be effective to compete, you need to be very efficient, rationalizing the resources that the company introduces into its own production process, increasing the training of digital skills in order to be more and more flexible and resilient to the rapid evolution of the market.

The project aims to digitize the deterministic processes currently developed by the company, through the introduction of Artificial Intelligence techniques.

The scientific objective is the study, through process mining techniques, of the data, information and events that these processes generate, research the success and failure factors that influence the outcome of the processes with respect to target variables defined a priori, then train algorithms of Machine Learning that can replace the current deterministic processes.

In terms of training and certainly of strong scientific interest, the possibility of starting experiments in a sector such as that of credit, which has strong impacts on the national economy and on the social context of the population, aimed at identifying those optimal processes that can lead to management and resolution of credit problems both for companies and for those who benefit from them.

Analysing the phenomena of credit processes through the data, the dynamics that these processes activate in the creditor-debtor relationship, with the aim of studying Artificial Intelligence algorithms to be applied to improve the effectiveness and efficiency of the processes, will have a training impact on the methodologies and techniques studied and applied that will go beyond the domain covered.

❖ **Company Supervisor:** Giuseppe Motta, Chief Technology Officer

❖ **Methods of training and research activities:**

The training will be provided through courses

- internal to the company which will concern the market in which the company operates and the processes related to the services provided by the company to the market;
- internal to the university department hosting the research, with the aim of studying technical tools and methodologies to be applied for training, prototyping and therefore the industrial development of technologies for process mining and artificial intelligence applied to processes and systems to support decisions.

The research activity will be aimed at achieving the project objectives and will have as its main source of experimentation the anonymized Fire database in which data, information and management events converge on a daily basis, on credit management operations typical of the company's core business, whose value exceeds 7,000,000 positions managed per year.

❖ **Effects and expected results with particular emphasis on promoting the economic development and the production system:**

The general objective of the Project is to combine the training aspect of a high professionalism specialized in the dynamics of the sector with the need to make credit processes more effective and efficient by means of artificial intelligence techniques.

The project:

- will have positive repercussions both for the company hosting the research, enhancing its competitiveness on the market;
- will have positive economic effects on the institutional customers of the company and therefore of the production system in general, as the desired improvement in terms of effectiveness and efficiency of the processes will improve the dynamics of repayment of receivables;
- will have positive repercussions on debt in general, thanks to the inclusion of Artificial Intelligence in the processes for resolving debt positions, which will be able to activate pathways for resolving will have repercussions on the scientific world, thanks to the possibility that the project will give to the study of the dynamics of debt resolution on a heterogeneous, anonymized set of data, sufficiently representative of the market.

❖ **Period in the company**

The proposing company (Fire SpA) will host the PhD student beneficiary of the scholarship financed on the resources of the Ministerial Decree 352/2022 for n. 18 months during the PhD program.

❖ **Period abroad:**

Period abroad for no. 6 months at the following institution: a company of the Fire Credit S.A. Group, based in Romania

We also declare that this program complies with the principle "not to cause significant damage" (DHS) pursuant to art. 17 of regulation (EU) 2020/852 in coherence with the technical guidelines prepared by the European Commission (Communication of the European Commission 2021 / C58 / 01) and guarantees compliance with the horizontal principles of the PNRR (contribution to the climate and digital target so-called tagging, the principle of gender equality and the obligation to protect and enhance young people).