

PhD in Management, Production and Design

Research Title: Economics and Management of Artificial Intelligence

Funded by	DIGEP - Dipartimento di Eccellenza
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Context of the research activity	Data and algorithms are now recognized as an essential new production factor, together with the “classic” capital and labor inputs, in firm’s production processes. The extensive use of large quantities of data in managerial practices is radically changing many well established processes and is at the center of the debate in both the economic and managerial literature. Examples of these changes range from the implementation of new commercial strategies (made possible through customer segmentation performed by machine and deep learning techniques) to radical changes in marketing policies through new patterns of demand analysis, and to the shift of decision power to blue collars.
Objectives	The goal of this PhD position is therefore to define a more precise theoretical and practical framework aimed at evaluating the joint impact of different forms of automation and artificial intelligence on firm performance and organization. In particular, the candidate will study the interplay between the adoption of artificial intelligence and the changes in managerial practices, firm productivity, organization and composition of workforce within a firm (i.e. the mix of skilled vs. unskilled workers), taking into account its potential impact on market and industry structures. Issues related to regulation regarding practices in the accumulation

	and use of data will be considered, too. The research will be based on both quantitative analysis based on firm specific data collection and qualitative researches of ad hoc case studies. This line of research is at the core of the Department project presented to the Ministry of Education (“Dipartimento di Eccellenza”) as well as in the agenda of both economics and management research groups at DIGEP.
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Skills and competencies for the development of the activity	The PhD candidate should have an in-depth knowledge on the economic and managerial aspects of innovation, firms and market organization as well as how to assess (qualitatively and quantitatively) the impact of technology adoption on firm performance and organization. Hence, basic knowledge on statistics and econometrics will also be positively evaluated.
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