POLITECNICO DI MILANO

# PhD in INGEGNERIA GESTIONALE / MANAGEMENT ENGINEERING - 37th cycle

### THEMATIC Research Field: ARTIFICIAL INTELLIGENCE & ETHICS

| Monthly net income of PhDscholarship (max 36 months) |
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| **€ 1400.0**<br>In case of a change of the welfare rates during the three-year period, the amount could be modified. |

| Context of the research activity | |
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| **Motivation and objectives of the research in this field** | Artificial Intelligence is one of the most promising digital technologies with the potential to play a key role in different fields. However, there are growing concerns over the possible ethical implications that the widespread and unregulated use of AI systems may have on human rights and the welfare of society as a whole. In order to address such concerns, both governmental agencies within the EU borders and international organizations have studied the possible ethical issues linked to the use of AI, releasing regulations and guidelines to ensure its trustworthy and responsible use in private companies, public institutions and governments. Therefore, dealing with ethical issues related to Artificial Intelligence is becoming also a matter of compliance and reputational safety that companies, public institutions and governments alike cannot overlook on. To this end, it is important to embed ethical principles into the development and implementation of AI systems and corporate strategies, spreading knowledge across the organization and fostering a culture where AI solutions may deliver value without provoking ethical backlash. |
| **Methods and techniques that will be developed and used to carry out the research** | The following methodologies will be applied in the research project:<br>- review and analysis of secondary sources: on one side to determine state of the art practices to prevent or confront ethical issues linked to AI use; on the other to map exisiting regulations on the topic and their contents<br>- conduction of case studies to investigate the degree of inclusion of ethical principles in the development and |

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| | implementation of AI solutions within companies and register best practices, risk mitigation actions, etc.<br>- inspection and comparison of (families of) AI algorithms to evaluate their proneness to ethical issues, adherence to the prescribed ethical standards, and eventually provide a classification of available (families of) algorithms<br>- surveys to gather companies? primary data on key aspects of their ethical strategy related to AI solutions<br>- develop analytical models and indexes to quantify the ethical risks associated with different AI solutions<br>- develop qualitative frameworks to guide ethical development and implementation of AI solutions in companies and public institutions |
| **Educational objectives** | The main educational objectives of the research project are the following:<br>- Developing the ability to elaborate qualitative and quantitative models to support the development and implementation of ethically compliant AI solutions<br>- Develop both a managerial and technical perspective on how to implement trustworthy AI systems within organizations |
| **Job opportunities** | The opportunities for a PhD graduate in this research area are:<br>- academic career in the field of Artificial Intelligence and Ethics, Digital Ethics<br>- advisory for companies whishing to build a strategy for the development and implementation of ethical AI solutions<br>- advisory for public institutions and governments in the definition of policies to guide the adoption of a trustworthy and responsible AI |
| **Composition of the research group** | 1 Full Professors<br>1 Associated Professors<br>0 Assistant Professors<br>1 PhD Students |
| **Name of the research directors** | prof. Giovanni Miragliotta |

| **Contacts** |
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| *Giovanni.miragliotta@polimi.it, 02 2399 2785* |

| Additional support - Financial aid per PhD student per year (gross amount) | |
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| **Housing - Foreign Students** | -- |
| **Housing - Out-of-town residents (more than 80Km out of Milano)** | -- |

| Scholarship Increase for a period abroad | |
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| **Amount monthly** | 566.36 € |
| **By number of months** | 6 |

**Additional information: educational activity, teaching assistantship, computer availability, desk availability, any other information**

The candidate will work at the Department of Management, Economics and Industrial Engineering and attend the PhD Courses and all the educational activities of the PhD Program in Management Engineering

*Funding for educational activities: 1st year: 1200 euros per student, 2nd year: 1200 euros per student, 3rd year: 1200 euros per student.*
*Teaching assistantship: There are various forms of financial aid for activities of support to the teaching practice. The PhD student is encouraged to take part in these activities, within the limits allowed by the regulations.*
*Desk availability: shared use*
*Computer availability: individual use*