ARTIFICIAL INTELLIGENCE

UNIAQ - Development of integrated methods across Control Theory and AI for optimal control and predictive maintenance in industrial automation

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Context of the research activity	AI for optimal control and predictive maintenance in industrial automation.
Objectives	One of the main problems in the "Industry 4.0" paradigm is enabling advanced optimal control and predictive maintenance strategies. This research focuses on integrating artificial intelligence, automation, and ICT technologies. The research activities will benefit from a long-term collaboration with the University of Pennsylvania, with exchange visiting periods foreseen, and a collaboration with SIGIT S.p.a. (Turin) within the DigInTraCE EU project (https://www.digintrace.eu) on optimization and defect detection on the injection moulding process.
Skills and competencies for the development of the activity	Due to the interdisciplinary nature of this Ph.D. project, the ideal candidate should have a strong background in Mathematics and in at least one of the following disciplines: 1. Advanced techniques of Machine learning 2. Advanced methodologies of Control Theory The ideal candidate is expected to be willing to improve her/his knowledge in the aforementioned disciplines. A good knowledge of Python and/or MATLAB programming languages is also expected.