

**PUBLIC SELECTION BASED ON QUALIFICATIONS AND INTERVIEW FOR THE AWARDING OF NO. 1 EARLY STAGE GRANT LASTING 12 MONTHS FOR CONDUCTING RESEARCH PURSUANT TO ART. 22 OF LAW NO. 240/2010 AT THE DEPARTMENT OF MANAGEMENT, INFORMATION AND PRODUCTION ENGINEERING (SC 09/A3 - INDUSTRIAL DESIGN, MACHINE CONSTRUCTION AND METALLURGY - SSD ING-IND/15 - DESIGN METHODS FOR INDUSTRIAL ENGINEERING) - CUP E11B20000010007 TYPE B
PICA CODE: 20AR009**

announced with decree of the Chancellor Rep. no. 83/2020 of 11.02.2020 and posted on the official registry of the University on 20.02.2020

RESEARCH PROJECT
“Ergonomics and collaborative robotics in industrial vision systems”

Research structure: Department of Management, information and production engineering

Duration of the grant: 12 months

Scientific Area: 09 – Industrial and information engineering

Academic recruitment field: 09/A3 – Industrial design, machine construction and metallurgy

Academic discipline: ING-IND/15 – Design methods for industrial engineering

Scientific Director: Prof. Caterina Rizzi

The WATCHMAN project aims to develop a hub of skills and experimentation on Computer Vision, through the development of Research and Development Goals developed in two application cases. The main goal is the creation of a new element of manufacturing processes (process innovation) with a high impact on product quality. It is the creation of a methodology with a modular approach for the design of highly reconfigurable Machine Vision systems, thanks to the introduction of the latest technological innovations in artificial intelligence, vision systems, collaborative robotics and data management. The purpose of the intervention is the creation of an extremely modular and easily reconfigurable system prototype, capable of solving heterogeneous artificial vision problems in manufacturing and beyond. In particular, modularity will allow the creation of interconnected but independent systems, and therefore usable together or alone on the basis of the needs of the end user. The reconfigurability will make the system easily adaptable to the solution of artificial vision problems in very different productive realities, covering the whole of the Lombard manufacturing sectors.

The research activity will mainly be focused on one workpackage: COLLABORATIVE ROBOTICS-ERGONOMICS module

The goal is to allow robots and human operators to work together with mutual benefit. The robot moves the image acquisition system by sharing the space with the operator who is in turn involved in training the robot which provides information on the operator's posture to maximize the ergonomics of the workstation.