

Communication Requirements for Robotic Cooperation in Industrial Environments

Industrial production lines are usually built to fulfill specific and well-defined tasks. However, if another task is envisioned during their lifecycle, the industrial line has to be disassembled and reorganized or even redesigned. Therefore, it becomes useful to have a generic and dynamic work environment where a central node orchestrates the collaboration among all-purpose robots. Such orchestration must happen by providing instructions and receiving feedback wirelessly. How timely commands and feedback must be disseminated depend, among other things, on the control architecture, dynamic properties and constraints of the robots and the task in question.

For this position, the candidate is required to define feasibility conditions where the task between a robotic arm and an AGV can be fulfilled. Furthermore, the candidate shall study the complications created by communications imperfections in the cooperative robotic system. Finally, mechanisms to increase robustness of the overall system shall be designed and implemented in a simulation environment.

The skills expected from the candidate are:

- Good knowledge in MATLAB programming.
- Good understanding of control and communication systems.
- Knowledge of system theory, signal processing and differential equations
- Ability to work independently
- Excellent communication skills in English, both written and spoken

In case this position appeals you, please send your CV, score sheet and a description of relevant projects / lectures you have engaged in, to:

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