STUDENT SECTION

Study of Cooperative Robots Behaviours in Automatic Industrial Manufacturing

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Abstract— The development of automated systems and the integration of industrial robots in to manufacturing processes have increased the work productivity and the product quality Industrial robots have changed production processes as computer have changed office work. The objective of this paper is the study o cooperative robots behaviors that perform some tasks under certain operating conditions in some environments. The future plant requires flexible cells and manufacturing systems well-handled by computers, programmable tools machine and industrial robots rigid and mobile that can perform autonomous and accurately various production tasks. . Multi-robot systems can perform tasks that no single robot can perform, since ultimately a single robot, no matter how capable, is spatially limited. The groups of robots are constructed with the purpose to study such issues as group architecture, conflict resources, and origin of cooperation, learning and geometric problems. The methods for modeling and simulating manufacturing systems must be flexible to support the dynamic nature of operation of these systems. The study is using Petri nets for the simulations processes because complex and real-time flexible manufacturing systems are hard to be modeled and analyzed. Petri nets provide a graphical notation for modeling systems and performing analysis.