



Engineering Systems with Intelligence

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Book Condition: New. Publisher/Verlag: Springer Netherlands | Concepts, Tools and Applications | This book contains a selection of papers presented at the "European Robotics and Intelligent Systems Conference" (EURISCON &91) held in Corfu, Greece (June 23-28, 1991). It is devoted to the analysis, design and applications of technological systems with built-in intelligence achieved through appropriate blending of mathematical, symbolic, sensing, computer processing, and feedback control concepts, methods and software / hardware tools. System intelligence includes human-like capabilities such as learning, observation, perception, interpretation, reasoning, planning, decision making, and action. Integrated intelligent decision and control systems obey Saridis' principle of Increasing Precision with Decreasing Intelligence (IPDI), and have a hierarchical structure with three basic levels, namely Organization, Coordination, and Execution Levels. As we proceed from the organization to the execution level, the precision about the jobs to be completed increases and accordingly the intelligence required for these jobs decreases. As an example, it is mentioned here that in an intelligent robotic system the organization tasks can be realized using a neural net, the coordination tasks by a Petri net, and the execution tasks by local sensors and actuators. The field of intelligent systems is a new interdisciplinary field with continuously increasing...



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