# INTELLIGENT CONTROL TECHNIQUES FOR MOBILE ROBOTICS

**Monica Dragoicea, Ioan Dumitrache**

*University "Politehnica" Bucharest*
*Automatic Control and System Engineering Department*
*Splaiul Independentei 313, Bucharest - 77206, Romania*

Abstract: Mobile robotics became a challenge from both theoretical and experimental point of view. Mobile agents could be useful in applications where human operators are powerless. Assembly and disassembly tasks are examples of such "unfriendly" operations for humans. This paper presents our research efforts in order to improve the operations of such mobile structures for difficult environments. The operation of an autonomous mobile robot in a real-world unstructured environment requires consideration of multiple issues. The controller must be able to operate under conditions of imprecision and uncertainty (prior knowledge about the environment is, in general, incomplete, uncertain, and approximate, perceptually acquired information is also typically noisy and incomplete). Furthermore, the execution of control commands is not completely reliable while the dynamics of real-world environments is complex and unpredictable. To cope with these difficulties, the controller must be able to respond reactively to unforeseen events as soon as they are perceived.

Keywords**:** mobile robots, neural networks, fuzzy hierarchic control

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