Smart systems

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Smart systems for the new millennium need to meet the challenge of flexibility and customized design requirements. From this point of view, one of the most decisive issues represents the design, analysis, and application of effective machine learning algorithms and data mining tools based in particular on artificial neural networks, fuzzy logic, evolutionary programming, and automata theory. The areas of our research include:

- specification of the properties characteristic for important features, significant input patterns and those tendencies in the system development, which might indicate its future change
- development of new adaptive methods and formal tools suitable for a fast and reliable detection and identification of significant data patterns
- design and verification of methods for optimization of the applied knowledge extraction techniques (neural networks and other data mining tools)
- exact analysis of the proposed methods and tools and their applications
- interpretation, verification, and visualization of the knowledge extracted from the analyzed data