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	Sommario/riassunto	The focus of this reprint is the development of novel intelligence techniques for solving various problems in engineering. These techniques, due to their ability to create complex relationships between dependent and independent variables, can be implemented in a faster and more reliable way. Such techniques utilise algorithms/approaches such as artificial neural networks, fuzzy logic, evolutionary theory, learning theory, and probabilistic theory, making them a suitable and useful fit for real-life complex problems. This reprint introduces the process of selecting, applying, and developing such techniques in different engineering designs and applications. In addition, the validation process of intelligence systems as an alternative is discussed in this reprint. Overall, this reprint forms an excellent introduction to these systems for engineers who are not familiar with them.