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Editorial

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Artificial intelligence and intelligent systems have become an important research topic for the last decade. Progress has shown some important results indicating several fielded applications making systems available for day to day use. The original vision of AI was to develop artificial artifacts with some human-like capabilities. It took over 100 years to realise such artifacts to some extent.

During 1970s it was only a hope to produce intelligence systems of today. Late 1980s the situation started to change. Many successful applications of machine learning, knowledge management and planning, high level of inference capabilities created a new stream of AI. AI then was seen as a proactive research area aiming to produce real-life examples. Nearly all of the post graduate studies around the world somehow got related to artificial intelligence. The progress then proceeded in twofolds. One have been on the theory of AI including new methods, methodologies, learning algorithms etc. While the other was focusing on the applications and implementations of those. Over the last two decades this trend has continued unabated yielding remarkable products serving human being in human-like manner. Deeper analysis on sub-fields of AI created huge amount of knowledge and directed the research towards back original vision of AI. For example, robotic technology now aims to create human-like robots capable of performing nearly all activities required by a human in a certain domain The methods utilized employ techniques such as neural networks and fuzzy logic as well as others which interact and reason about the process and its environment through active perception-cognition and action processes.

Business Intelligence on the other hand is considered to be a process for extracting, transforming, managing and analyzing huge amount of data in order to make better decision affecting the business results in a positive way. The literature can clearly indicate so many successful applications of artificial intelligence technologies along this line in the field of Supply Chain Management, Customer Relationship Management, Data Mining, Data Warehouse, Decision Support System, Performance Scorecard, Knowledge Management, Business Process Management, Enterprise Resource Planning, Extract Transformation Loading, OLAP, Quality Management Systems, Cell formation, Job shop Scheduling etc.

Now, AI systems still keep full interest of the researcher in the domain and continue in the same trend even going into more deeper analysis as well as more specific fielded applications. It seems that designing and developing intelligent systems is no longer a problem. However, the performance of the systems developed is now the main concern. Having distributed architectures, increasing the flexibility and interoperability, reusability, cooperation and coordination, machine based communication languages seem to be the driving force of the research on intelligent systems. It seems that the products will be competing not only by having some intelligent capabilities but also having better intelligence than those provided by others.

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International Symposium on Intelligent Manufacturing System (IMS) has been international events hold biannually. The main aim of the symposium is to create a discussion forum among the researcher mainly in the field of artificial intelligence as well as its practitioners. This issue presents several research along the application of artificial intelligence to many real-life problems from genetic algorithm based tabu search for job shop scheduling and cell formation to robot path planning, from fuzzy logic controller to Bee Colony Algorithm developed for Large-Scale Problems and Engineering Design Optimization. Some theoretical contribution is also provided in the areas of agent based metaheuristics and swarm intelligence. IMS will continue to follow the progress and bring the scientist and industrial practitioners together for creating better, safer and cheaper intelligent systems.

The market will realise so many different types of intelligent products with variety of capabilities. It will not be surprising to see the robots wondering around some providing better benefits than others. The research will also concentrate on the level of intelligence and multi functionality of the systems. This was main expectation of the artificial intelligence community in 1950s to produce an intelligent machine. Since then intelligent programs dominated the scientific community rather than machines. But it seems the following decade will direct the research along with creating intelligent machines again since there has been remarkable progress along with both technology and methodology.

It was hoped that the papers presented in this issue will highlight new research areas and will be the source of knowledge for many other studies contributing to the progress in intelligent system design and development.