

The Usage of Artificial Intelligence Technology in Legal Information Processing

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Abstract: Artificial intelligence technologies (AI) are devoted to create intelligent software that imitates the human mind. The main goal of AI technologies is to make computers smarter by creating software that will allow a computer to mimic some of the functions of the human brain in selected applications. Applications of AI technologies include; general problem solving, computer vision, expert systems, natural language processing, robotics, and education. All of these applications employ knowledge base and inference methodologies and techniques to solve problems in specific domains.

Expert systems (ESs) are considered one of the subfields of AI and can be aid in solving problems and consultation purposes. ES contains the knowledge and experience of one or more experts in a specific domain that anyone can tap as an aid in solving problems. Applications of ESs include the following tasks; diagnosis, design, control, debugging, instructions, interpretation, planning, prediction, and repairing. On the other hand, “Legal Informatics” is a new research area which integrates legal sciences, information sciences, knowledge management, artificial intelligence and computer sciences .Legal expert systems are the most important area of the legal informatics research. Today, these systems are used as intelligent advisor and consultant in the following legal issues; interpretation, reasoning and prediction, document generation, scheduling and monitoring and case management.

This paper discusses the different subfields of the artificial intelligence technologies. In addition, the paper addresses the technical aspects, applications and challenges of the legal expert systems. This article explains legal expert systems applications. Further, the technical features of sixteen systems are determined.

Keywords: Knowledge management, Legal information processing, Intelligent information systems, Artificial intelligence, Legal expert systems, Machine learning