Special Track on

Design, Evaluation, and Refinement of Intelligent Systems

Design, evaluation and refinement of AI systems has been a popular topic at FLAIRS many year and started as a special track in 1997. More and more authors have realized that the lack of systematic methods and formal techniques for verification and validation has often been a reason for not using AI systems in practice. The first contributions in this field were limited to classical AI systems. Nowadays, also papers on verification and validation of nonclassical kinds of systems (like case-based systems), nonclassical knowledge representations (like ontologies), knowledge processing principles (such as learning principles), intelligent behavior, and even semiformal knowledge representations (such as storyboards for modeling processes with humans involved) are being published. In some fields, this research came to stage, at which we were able to clearly indicate invalid items of knowledge bases. Consequently, the refinement issue became another focus of this special track. At some point, developing refinement technologies is also a design issue. Therefore, we generalized the track name to "Design, Evaluation, and Refinement of Intelligent Systems."

The objective of this track is to focus on the contributions in these fields and to provide an environment for communicating different paradigms and approaches, thus hopefully stimulating future cooperation and synergistic activities. Typical contributions focus on detecting and handling inconsistencies and other anomalies within knowledge bases; fundamentals and formal methods for verification of AI systems; fundamentals and formal methods and techniques of validity assessment of AI systems, AI principles, and intelligent behavior in general; special approaches to verify and/or validate certain kinds of AI systems: rule based, case-based, etc.; special approaches or tools to evaluate systems of a particular application field; knowledge base refinement by using the results of evaluation; development and evaluation of ontologies; maintenance and evolution of knowledge systems and ontologies; methods for the evaluation of distributed knowledge bases; evaluation of semi-formal knowledge bases; and problems in system certification. However, this special track is not limited to these issues. We learned that many other items in AI system development can become a subject to evaluation and refinement issues and thus, a contribution, which was welcome in this special track.