This issue contains four research articles. The first article by Ali, et al. presents research encompassing a new Web page classification scheme and a new method for applying Bayes theory to develop a domain specific and self-adapting mechanism to improve Web performance overtime. The contribution of this article is three-edged; firstly, a novel learning technique called Continuous Learning is introduced. Secondly, the article presents a new trend for Web page classification by presenting the domain-oriented classifiers (vertical classifiers). A new way of applying Bayes and K-Nearest Neighbor algorithms is introduced in order to build Domain Oriented Naïve Bayes (DONB) and Domain Oriented K-Nearest Neighbor (DOKNN) classifiers. The third contribution combines both disciplines by introducing a novel classification strategy. Such a strategy adds the continuous learning ability to Bayes theorem to build a Continuous Learning domain oriented Naïve Bayes (CLNB) classifier. Whereas the overfitting problem has a great impact on most Web page classification techniques, continuous learning can be considered as a proposed solution. CLNB allows the classifier to adapt itself continuously for achieving better performance. The proposed classifiers are tested; experimental results have shown that CLNB demonstrates significant performance improvement over both DONB and DOKNN where its accuracy goes beyond 94.1% after testing 1000 pages.

In the second article by Shakshuki, et al., the new contribution constructs a schedule among distributed participants represented by agents to be considered as a constraint satisfaction problem (CSP) of the type probabilistic Interval Algebra network (PIA network). An Interval Algebra (IA) network is a graph where each node represents an interval. Directed edges in the network are labeled with temporal interval relations. A probabilistic IA network has probabilities associated with the relations on the edges that can be used to capture preferences. A probabilistic IA agent (PIA-Agent) is assigned a probabilistic IA network. PIA-Agent’s networks are connected via edges. The overall goal is to make each PIA-Agent’s network consistent and optimal in generating a schedule among participants. Each PIA-Agent is independent and has sole control over its network. But, that agent must communicate and coordinate with other PIA-Agents when modifying or updating edges that are shared between two PIA-Agents. The authors present an algorithm which allows the PIA-Agents to collaboratively solve and recommend a temporal schedule. At the agent level, this schedule is optimal under the given local constraints; however, the proposed distributed system is not centrally controlled. The algorithm decides which PIA-Agent should be given an opportunity to decide the sequencing of updates for the solution, such as the case when a conflict is detected.
The third article by Ngan, et al. presents a survey of Web service discovery systems concentrating on semantic Web theory. According to the article, discovery is the most important task in the Web service model because Web services are useless if they cannot be discovered. Therefore, a large number of Web service discovery systems have been developed. Universal Description, Discovery, and Integration (UDDI) is a typical mechanism that stores indexes to Web services, but it does not support semantics. Semantic Web service discovery systems that have been developed include systems that support matching Web services using the same ontology, systems that support matching Web services using different ontologies, and systems that support limitations of UDDI. This article presents a survey of Web service discovery systems, focusing on systems that support semantics. The article also elaborates on open issues relating to such discovery systems.

The fourth and final article by Sait, et al. presents the results of a survey over two years on the effects of the Internet in the Kingdom of Saudi Arabia. The Internet being relatively new, its effects and impact on Saudi society are still in their infancy. A survey-based study was conducted to measure these effects, monitor their influence, project possible long-term developments, and define early measures that would best harness this new technology. Furthermore, this study also identifies and documents any noticeable shifts in perspectives. This work presents the findings and observations drawn from this study and is based on the direct interpretation and cross-analysis of survey responses. It is hoped that this study of the geographically largest country and market in the Gulf region would assist companies and professional in identifying mechanisms for successfully deploying Internet-based technologies in the Kingdom of Saudi Arabia. In addition, this article is the first among the categories of behavioral research on Web engineering. The editors hope that it will attract more articles along this type of research where technology and behavioral aspects merge.

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