CS7044 Research Paper Abstract

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"Unreasonable Expectations: An Examination of the Semantic Web in the Light of the Original Vision for the Project"

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This paper is concerned with the relationship between the Semantic Web as it was originally envisioned and the present status of the endeavour. The Semantic Web is an enhanced version of the existing World Wide Web in which data that can be processed by computers is added to web pages in order to make it easier for users to locate and exchange information. It was proposed by Sir Tim Berners-Lee, the invention of the original Web. The paper begins with a consideration of the original vision for the Semantic Web outlined by Berners-Lee and others around the turn of the millennium. The new generation of web technologies which were designed based upon this vision are then explored. The second chapter is centred upon the issue of which organisations are currently making use of Semantic Web technologies and principles, with particular attention being paid to major companies such as Facebook and Google. The third chapter takes as its focus the successes and difficulties experienced within the field of Semantic Web research in recent times. Chief among the successes is the Linked Open Data initiative which allows for related sets of structured data to be exposed in a uniform fashion, permitting like elements from distinct datasets to be related directly to each other, which enables new insights to be made at unprecedented scales. This paper suggests that some of the difficulties currently being encountered in the Semantic Web community are related to the engagement with artificial intelligence research, specifically the area of knowledge representation (KR). KR employs techniques based on traditional formal logic to encode meaning in a manner that allows computers to perform reasoning operations. This paper identifies a conflict between KR methodologies and the heterogeneity of data on the Web. The paper concludes that the field of Semantic Web research has become overly focused on KR problems and needs to return to the user-centred original vision if it is to generate worthwhile applications.