World Academy of Science, Engineering and Technology
International Journal of Computer and Information Engineering
Vol:9, No:06, 2015

A Tool for Facilitating an Institutional Risk Profile Definition

Authors : Roman Graf, Sergiu Gordea, Heather M. Ryan

Abstract : This paper presents an approach for the easy creation of an institutional risk profile for endangerment analysis of file formats. The main contribution of this work is the employment of data mining techniques to support risk factors set up with just the most important values that are important for a particular organisation. Subsequently, the risk profile employs fuzzy models and associated configurations for the file format metadata aggregator to support digital preservation experts with a semi-automatic estimation of endangerment level for file formats. Our goal is to make use of a domain expert knowledge base aggregated from a digital preservation survey in order to detect preservation risks for a particular institution. Another contribution is support for visualisation and analysis of risk factors for a requried dimension. The proposed methods improve the visibility of risk factor information and the quality of a digital preservation process. The presented approach is meant to facilitate decision making for the preservation of digital content in libraries and archives using domain expert knowledge and automatically aggregated file format metadata from linked open data sources. To facilitate decision-making, the aggregated information about the risk factors is presented as a multidimensional vector. The goal is to visualise particular dimensions of this vector for analysis by an expert. The sample risk profile calculation and the visualisation of some risk factor dimensions is presented in the evaluation section.

Keywords : digital information management, file format, endangerment analysis, fuzzy models
Conference Title : ICDIM 2015 : International Conference on Digital Information Management
Conference Location : Venice, Italy
Conference Dates : June 22-23, 2015