

An ontological approach to lifelog representation for disclosure control

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Abstract: In services using lifelog collected continuously and over a long period of time, disclosure control is essential in order to deal with the privacy because this lifelog includes confidential information which users are unwilling to disclose freely. This paper proposes an ontology model for disclosure control needed to handle each user's lifelog. The user is able to easily set disclosure rules on his/her diverse data collected from various data sources. Features of the proposed model are as follows: (1) Values can be differentiated by their context, (2) Various time expressions can be handled and (3) Disclosure attribute is set on each lifelog item (fine-grained control). We show an example of implementation and the result of experiments using an implemented system. ©2009 IEEE.

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References:

- Eitoku, S., A study on Visualization of Personal Lifelog Considering Disclosure Control (2008) IEICE Technical Report, pp. 97-104. , ISEC2008-88, OIS2008-64, pp, in Japanese
- Hightower, J., Practical Lessons from Place Lab (2006) IEEE Pervasive Computing, 5 (3), pp. 32-39
- Tomioka, A., Information Distributing System Based on User Behavior (2007) NTT Docomo Technical Journal, 9 (1), pp. 51-56
- Abe, M., A Life Log Collector Integrated with a Remote-Controller for Enabling User Centric Services (2009) IEEE Transaction on Consumer Electronics, 55 (1). , in appear
- Nishino, M., A Place Prediction Algorithm Based on Time-Sensitive Frequent Patterns Proc. of Pervasive 2009 (in appear)
- Seko, S., An Algorithm to Estimate the Level of Friendship Based on the Mode of Transportation and the Time Spent Sharing Movement Tracks (2009) Proc. Pervasive, , in appear
- Floreen, P., Towards a Context Management Framework for MobiLife (2005) IST Mobile & Wireless Communications Summit
- Kirby, G., GloSS Ontology and Narratives GLOSS Consortium Report, , D7, 2002
- Chen, H., SOUPA: Standard Ontology for Ubiquitous and Pervasive Applications (2004) Proc. of First Annual International Conference on Mobile and Ubiquitous Systems: Networking and Services (MobiQuitous'04), pp. 258-267
- Strimpakou, M.A., A Context Ontology for Pervasive Service Provision (2006) Proc. of 20th International Conference on Advanced Information Networking and Applications, pp. 775-779
- Hamdeh, N.A., OWL-based Ontology for Secure and Adaptable Ubiquitous Environment (2007) Proc. of Third International Conference on Semantics, pp. 230-235. , Knowledge and Grid, pp
- Pan, F., Temporal Aggregates in OWL-Time (2005) Proc. of 18th Inter Conf. Florida Artificial Intelligence Research Society, pp. 560-565. , AAAI Press
- Zhou, Q., A Reusable Time Ontology (2002) Proc. of the AAAI Workshop on Ontologies for the Semantic Web
- Kagal, L., (2002) Technical report of HP Laboratories, , A Policy Language for the Me-Centric Project, Palo Alto
- O'Connor, M., Supporting Rule System Interoperability on the Semantic Web with SWRL (2005), pp. 974-986. , The Semantic Web, ISWC