

Supporting Web-based scholarly annotation

Expression of Interest in participating in the W3C Workshop on Annotations

Anna Gerber
The University of Queensland, Australia

The eResearch Group, led by Professor Jane Hunter at the School of Information Technology and Electrical Engineering at the University of Queensland, develops software and services to support researchers across disciplines including the Humanities, Social Sciences, Biological, Chemical, Environmental and Materials Sciences. Annotation is a core practise for scholars across these disciplines, supporting collaborative and individual note-taking, tagging, classification, and semantic enrichment of digital documents and research data.

Although there are various annotation systems used by researchers, many of them are proprietary, can only be used within specific collections or sites, and do not support sharing of annotations between institutions or annotation systems. As members of the Open Annotation Collaboration (OAC) and more recently, through our involvement with the W3C Open Annotation Community Group, we have contributed to the development of the Open Annotation Data Model (OA), an interoperable framework for Web-based annotations that aims to address these issues.

Some of the scholarly annotation applications that the ITEE eResearch Group has developed include:

- Annotations supporting collaborative electronic scholarly editing (AustESE), using the OA model [1]
- Semantic annotation of 3D scans of museum artefacts, using OA [1]
- Annotation of animal sensor data and video streams, using OA [1]
- Annotating bibliographic records and texts, using the OAC model and Annotea [2]
- Annotating maps, images and biodiversity records, using the Annotea model [3]
- Semantic tagging, using Annotea [4]
- Annotation of 3D protein crystallography models, using Annotea [5]
- Multimedia annotations using Annotea [6]

Much of the software that we have developed to support these projects has been released under Open Source licenses, for example, the lorestore annotation repository, lore Firefox extension, and plugins extending the OKF's Annotator tool and associated Drupal module developed for AustESE [7]. Adopting an extensible core model across our Annotation-related projects has meant that we could reuse backend services supporting annotation storage, validation and

publishing, allowing us to focus on developing tailored annotation clients that extend the core model where necessary to meet the specific needs of each research community.

We look forward to discussing some of the challenges that still remain to be addressed in order to achieve seamless discovery and sharing of Web-based annotations between systems, including APIs for creation, update, deletion and querying of annotations; annotating segments of dynamic Web documents; addressing annotations across equivalent resources in different formats; and balancing flexibility with the potential ambiguity and complexity of the OA model and implementation concerns, at the W3C Workshop on Annotations.

References

1. J. Hunter and A. Gerber. "Towards Annotopia - Enabling the Semantic Interoperability of Web-Based Annotations". *Future Internet* 2012; 4(3):788-806
2. A. Gerber, A. Hyland and J. Hunter, "A Collaborative Scholarly Annotation System for Dynamic Web Documents - a Literary Case Study", *International Conference on Asian Digital Libraries (ICADL)*. Gold Coast, Australia, June 21 - 25 2010.
3. DIAS-B Project. <http://www.itee.uq.edu.au/eresearch/projects/diasb/overview>
4. J. Hunter, I. Khan and A. Gerber, "HarVANA - Harvesting Community Tags to Enrich Collection Metadata", *Joint Conference on Digital Libraries, JCDL 2008*. Pittsburgh, PA, USA, June 16 - 20, 2008. pp 147-156.
5. J. Hunter, M. Henderson and I. Khan, "Collaborative Annotation of 3D Crystallographic Models", *ACS Journal of Chemical Information and Modeling (JCIM)*. 47(5), September 2007. doi:10.1021/ci700173y
6. R. Schroeter and J. Hunter. "Annotating Relationships between Multiple Mixed-media Digital Objects by Extending Annotea", *Proceedings of the 4th European Semantic Web Conference, ESWC 2007*. Innsbruck, Austria. June 2007. pp 533-548. doi:10.1007/978-3-540-72667-8_38
7. AustESE Source Code <http://uq-eresearch.github.io/AustESE/code.html>