Reviewer's report

Title: Using image mapping towards biomedical and biological data sharing

Version: 1 Date: 28 May 2013

Reviewer: Alistair Young

Reviewer's report:

This paper is a review article which covers image based data integration for biomedical applications. It gives an overview of the common applications of image mapping and registration as well as natural language data mining methods. Emphasis is placed on spatial relationships, both ontology based and image based. In general the paper is well written and the motivation is clearly presented.

Major Compulsory Revisions

1. The paper has no figures, which detracts from the overall message since image data mapping lends itself to highly visual representations. Examples could be presented illustrating the published work.

2. The overview of commonly used ontologies could include discussion of some standard ontologies such as Radlex, FMA, and Snomed-CT, and how these fit into the framework of the paper.

3. Explanation could be given on how these methods can integrate into knowledge representation systems, eg OWL (web ontology language) or RDF (resource description framework).

4. Common atlases and databases should be referenced. Eg. The Human Connectome project, the Cardiac Atlas Project, the MNI atlas, etc.

5. Detection of fiducial points should include machine learning methods which currently show promise eg Georgescu et al “Database-guided segmentation of anatomical structures with complex appearance” Computer Vision and Pattern Recognition, 2005, 429 - 436 vol. 2

6. Overall there is a lack of recommendations for current best practice, or suggestions for how the field should develop in the authors' opinion.

Minor Essential Revisions:

1. “image of a mammalian with those anatomical domains” typo?

2. The references need to be checked. Eg 9, 18, 35,38 have no page numbers. Ref 15 has no Journal name.

Level of interest: An article whose findings are important to those with closely related research interests

Quality of written English: Acceptable
Statistical review: No, the manuscript does not need to be seen by a statistician.

Declaration of competing interests:
I declare that I have no competing interests