Reviewer’s report

Title: Effective Diagnosis of Alzheimer's Disease by means of Large Margin-based methodology

Version: 2 Date: 22 November 2011

Reviewer: kewei chen

Reviewer’s report:

Main concerns:
Unfortunately, the major concern this reviewer had in the last round of review was not adequately addressed by the authors. That is the clinical diagnosis of the AD patients. In their original submission, the authors’ description gave the impression that the diagnosis was purely based SPECT data (visual examination). In the current revision, the authors claimed that the diagnosis was based on not only SPECT data but also, as stated in the response to the comments from this reviewer, ‘from the agreement with the cognitive test and medical history of the patient. Thus the gold standard used in this work may be accepted as the ground truth.’

However, their added paragraph did not state what the cognitive test/tests was/were, how they were conducted. Instead, the added paragraph is more like general comments or review of literature on ‘experts versus CADs’. Thus, the diagnosis of the AD could not be viewed as ‘unbiased’ as claimed by the authors. To the least, the authors should provide MMSE (or something similar), other cognitive test scores and report the differences between normal and patients with AD.

Again, this reviewer is not convinced and still with the impression that the diagnosis was based on the SPECT data. This reviewer feels this ‘diagnosis’ issue is very fundamental to judge the soundness of the introduced methods

Minor issues:
For the PLS, please specify the exact non-linear mapping function for the kernel PCA and the rational

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

Quality of written English: Acceptable

Statistical review: Yes, and I have assessed the statistics in my report.

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