Deep Multi-Task Multi-Channel Learning for Joint Classification and Regression of Brain Status
–*Supplementary Materials*

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1 Results of Multi-class Disease Classification

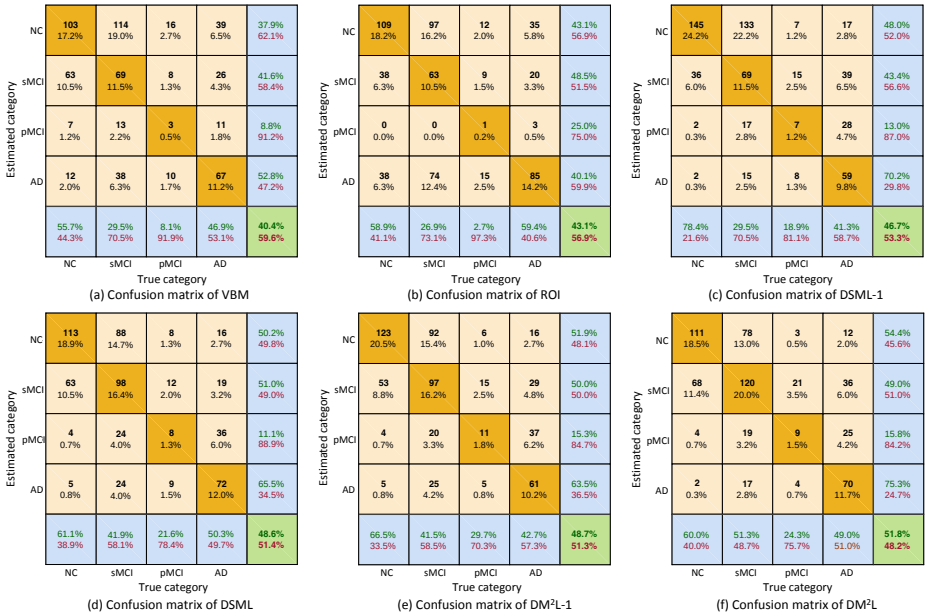

Fig. S1. Confusion matrices achieved by six different methods in multi-class (NC vs. sMCI vs. pMCI vs. AD) disease classification.

We further show the multi-class classification (NC vs. sMCI vs. pMCI vs. AD) achieved by our proposed deep multi-task multi-channel learning (DM^{2}L) approach and five competing methods (*i.e.*, VBM [1], ROI [2], DSML-1, DSML,

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and DM^{2}L-1). The confusion matrices achieved by different methods are reported in Fig. S1. From Fig. S1, we can see that in terms of the overall classification accuracy, the proposed DM^{2}L method generally outperforms those competing methods. It further suggests the effectiveness of the proposed method.

References

1. Baron, J., Chetelat, G., Desgranges, B., Perchey, G., Landeau, B., De La Sayette, V., Eustache, F.: In vivo mapping of gray matter loss with voxel-based morphometry in mild Alzheimer's disease. NeuroImage **14**(2) (2001) 298–309
2. Liu, M., Zhang, D., Adeli, E., Shen, D.: Inherent structure-based multiview learning with multitemplate feature representation for Alzheimer's disease diagnosis. IEEE Transactions on Biomedical Engineering **63**(7) (2016) 1473–1482