

## Supplementary Material of: “Prognosis of dementia with machine learning and microsimulation techniques: a systematic literature review”

This document contains the supplementary material regarding the systematic literature review entitled: “Prognosis of dementia with machine learning and microsimulation techniques: a systematic literature review”.

### List of the selected studies

In this section, it will be shown the list of the selected studies, along with the journal or source where it was published, authors and year of publication (see table S1).

Table S1. Selected primary studies

Title	Journal/Source	Authors	Year
A comparison of three brain atlases for MCI prediction	Journal of Neuroscience Methods	Ota, Kenichi, et al.	2014
Accurate multimodal probabilistic prediction of conversion to Alzheimer's disease in patients with mild cognitive impairment	NeuroImage. Clinical	Young, Jonathan, et al.	2013
An event-based model for disease progression and its application in familial Alzheimer's disease and Huntington's disease	NeuroImage	Fontejn, Hubert M., et al.	2012
An MRI-derived definition of MCI-to-AD conversion for long-term, automatic prognosis of MCI patients	PloS One	Aksu, Yaman, et al.	2011
Anatomically constrained weak classifier fusion for early detection of Alzheimer's disease	5th International Workshop on Machine Learning in Medical Imaging	Komlagan, Mawulawoé, et al.	2014
Applying Automated MR-Based Diagnostic Methods to the Memory Clinic: A Prospective Study	Journal of Alzheimers Disease	Klöppel, Stefan, et al.	2015
Automated detection of brain atrophy patterns based on MRI for the prediction of Alzheimer's disease	NeuroImage	Plant, Claudia, et al.	2010
Automated hippocampal shape analysis predicts the onset of dementia in mild cognitive impairment	NeuroImage	Costafreda, Sergi G., et al.	2011
Automatic classification of patients with Alzheimer's disease from structural MRI: a comparison of ten methods using the ADNI database	NeuroImage	Cuingnet, Rémi, et al.	2011
Automatic Prediction of Conversion from Mild Cognitive Impairment to Probable Alzheimer's Disease using Structural Magnetic Resonance Imaging	AMIA ... Annual Symposium proceedings	Nho, Kwangsik, et al.	2010
Bioprofile analysis: A new approach for the analysis of biomedical data in Alzheimer's disease	Journal of Alzheimer's Disease	Escudero, J.; Ifeachor, E.; Zajicek, J.P.	2012
BrainAGE in Mild Cognitive Impaired Patients: Predicting the Conversion to Alzheimer's Disease	PloS One	Gaser, Christian, et al.	2013
Clinical Decision Trees for Predicting Conversion from Cognitive Impairment No Dementia (CIND) to Dementia in a Longitudinal Population-Based Study	Archives of Clinical Neuropsychology	Ritchie, Lesley J.; Tuokko, Holly	2011
Deep learning-based feature representation for AD/MCI classification	Medical image computing and computer-assisted intervention	Suk, Heung-Il; Shen, Dinggang	2013
Derivation of a new ADAS-cog composite using tree-based multivariate analysis: Prediction of conversion from mild cognitive impairment to alzheimer disease	Alzheimer Disease and Associated Disorders	Llano, D.A.; Laforet, G.; Devanarayan, V.	2011
Different multivariate techniques for automated classification of MRI data in Alzheimer's disease and mild cognitive impairment	Psychiatry Research-Neuroimaging	Aguilar, Carlos, et al.	2013

Discriminant analysis of longitudinal cortical thickness changes in Alzheimer's disease using dynamic and network features	Neurobiology of Aging	Li, Yang, et al.	2012
Domain Transfer Learning for MCI Conversion Prediction	IEEE transactions on bio-medical engineering	Cheng, B., Zhang, D., & Shen, D.	2015
Estimation and validation of a multiattribute model of alzheimer disease progression	Medical Decision Making	Stallard, Eric, et al.	2010
Evaluation of Plasma Proteomic Data for Alzheimer Disease State Classification and for the Prediction of Progression From Mild Cognitive Impairment to Alzheimer Disease	Alzheimer Disease & Associated Disorders	Llano, Daniel A., et al.	2013
Hierarchical interactions model for predicting Mild Cognitive Impairment (MCI) to Alzheimer's Disease (AD) conversion	PloS One	Li, Han, et al.	2014
How early can we predict Alzheimer's disease using computational anatomy?	Neurobiology of Aging	Adaszewski, Stanislaw, et al.	2013
Identification of conversion from mild cognitive impairment to Alzheimer's disease using multivariate predictors	PloS One	MLA Cui, Yue, et al.	2011
Inter-modality relationship constrained multi-modality multi-task feature selection for Alzheimer's Disease and mild cognitive impairment identification	NeuroImage	Liu, Feng, et al.	2014
Machine learning framework for early MRI-based Alzheimer's conversion prediction in MCI subjects	NeuroImage	Moradi, Elaheh, et al.	2015
Magnetic resonance imaging biomarkers for the early diagnosis of Alzheimer's disease: a machine learning approach	Frontiers in Neuroscience	Salvatore, Christian, et al.	2015
Manifold population modeling as a neuro-imaging biomarker: application to ADNI and ADNI-GO	NeuroImage	Guerrero, Ricardo, et al.	2014
Modeling screening, prevention, and delaying of Alzheimer's disease: An early-stage decision analytic model	BMC Medical Informatics and Decision Making	Furiak, Nicolas M., et al.	2010
Morphological hippocampal markers for automated detection of alzheimer's disease and mild cognitive impairment converters in magnetic resonance images	Journal of Alzheimer's Disease	Ferrarini, Luca, et al.	2009
Multiplexed immunoassay panel identifies novel CSF biomarkers for Alzheimer's disease diagnosis and prognosis	PloS One	Craig-Schapiro, Rebecca, et al.	2011
Neural networks for longitudinal studies in Alzheimer's disease	Artificial Intelligence in Medicine	Tandon, Reeti; Adak, Sudeshna; Kaye, Jeffrey A.	2006
Predicting conversion from MCI to AD with FDG-PET brain images at different prodromal stages	Computers in Biology and Medicine	Cabral, Carlos, et al.	2015
Predicting future clinical changes of MCI patients using longitudinal and multimodal biomarkers	PloS One	Zhang, Daoqiang; Shen, Dinggang	2012
Prediction of conversion from mild cognitive impairment to Alzheimer disease based on bayesian data mining with ensemble learning	The Neuroradiology Journal	Chen, R., et al.	2012
Predictive markers for AD in a multi-modality framework: an analysis of MCI progression in the ADNI population	NeuroImage	Hinrichs, Chris, et al.	2011
Semi-supervised learning in MCI-to-ad conversion prediction When is unlabeled data useful?	DeepDyve	Moradi, Elaheh; Tohka, Jussi; Gaser, Christian	2014
Sparse learning and stability selection for predicting MCI to AD conversion using baseline ADNI data	BMC Neurology	Ye, Jieping, et al.	2012