

# Yet Another ADNI Machine Learning Paper? Paving The Way Towards Fully-reproducible Research on Classification of Alzheimer’s Disease

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This document is a supplementary material for the submitted article.

IMAGE TYPE	CLASSIFIER	TASK	AUC	BAL ACC	SENS	SPEC
T1	Linear SVM	AD vs CN	94.2%	88.8%	92.8%	84.8%
		MCIc vs CN	85.5%	80.5%	66.8%	89.3%
		MCIc vs MCIInc	73.8%	66.5%	64.9%	69.3%
		AD-A $\beta$ + vs CN-A $\beta$ -	93.6%	87.9%	90.5%	85.5%
		MCIc-A $\beta$ + vs MCIInc-A $\beta$ +	73.6%	65.8%	69.8%	60.3%
	Regul SVM	AD vs CN	94.9%	90%	92.5%	87.3%
		MCIc vs CN	86.5%	81.2%	74.7%	85.4%
		MCIc vs MCIInc	74.8%	67.3%	66.8%	68.8%
		AD-A $\beta$ + vs CN-A $\beta$ -	94.9%	88.1%	92.5%	84.2%
		MCIc-A $\beta$ + vs MCIInc-A $\beta$ +	73.5%	65.4%	56.8%	76.2%
FDG PET	Linear SVM	AD vs CN	96.7%	91.1%	95%	87.2%
		MCIc vs CN	89.1%	83.5%	74.7%	89.2%
		MCIc vs MCIInc	80.5%	75.2%	78.5%	69.4%
		AD-A $\beta$ + vs CN-A $\beta$ -	98.6%	94.4%	95.6%	93.4%
		MCIc-A $\beta$ + vs MCIInc-A $\beta$ +	80.8%	72.8%	77%	67%
	Regul SVM	AD vs CN	96.7%	91.1%	94.8%	86.9%
		MCIc vs CN	88.8%	83.0%	76.5%	87.1%
		MCIc vs MCIInc	80.4%	73.7%	74.5%	71.9%
		AD-A $\beta$ + vs CN-A $\beta$ -	98.7%	95.4%	96.9%	93.8%
		MCIc-A $\beta$ + vs MCIInc-A $\beta$ +	78.0%	71.3%	73.5%	67.8%

**Table 1.** Classification results for T1 and FDG PET modalities (mean of 10 runs)

IMAGE TYPE	CLASSIFIER	TASK	BAL ACC	SENS	SPEC
T1+FDG PET	Linear SVM	AD vs CN	90%	93%	87%
		MCIc vs CN	81%	88%	73%
		MCIc vs MCIc	73%	79%	68%
		AD-A $\beta$ + vs CN-A $\beta$ -	95%	95%	94%
		MCIc-A $\beta$ + vs MCIc-A $\beta$ +	73%	77%	69%
	Regul SVM	AD vs CN	92%	95%	89%
		MCIc vs CN	82%	87%	77%
		MCIc vs MCIc	72%	75%	69%
		AD-A $\beta$ + vs CN-A $\beta$ -	96%	97%	95%
		MCIc-A $\beta$ + vs MCIc-A $\beta$ +	72%	77%	67%

**Table 2.** Best classification results for MKL combining T1 and FDG PET