

Restricted Boltzmann Machines

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	Olivetti faces						
	Logistic Regression						
	Score	RBM Components					
	95	100					
	92	64					
	96	128					
	98	150					
	96	180					
	99	150	with GridCV				
	MNIST						
1	logistic	with nudge					
	Iterations	RBM Components	score				
	10	50	84				
	20	100	89				
	40	60	90				
	no nudge						
	40	100	90				
	40	150	94				
	40	200	95				
	60	120	95				
2	svm						
	40	50	92				
	40	100	95				
	30	300	97				
	40	400	98				
	60	450	98				
3	Image scaled 16x16px	Fastest performance	SVM				
	no rbm	94%					
	with rbi 100 components	95%					
	grid search	97%					
	40	60	94				
	100	120	96				
	Feature combining	RBM + PCA +LDA					
	rba(100) + pca(100) + lda(100) = 300 components	98%	gray scale input (non binary)				
	-same-	97%	binarized image				
	pca(120) +rbm (120)	97%	binarized image				
	Neural Network	FNN with Backprop					
	Hidden Neurons	Epochs	Test error	Input			
	10	3	15.3	256			
	40	6	16.0	784			
	40	6	13.7	784			
	78	7	11.1	784			
	100	3	12.84				
	RBM + NN	16x16 resized					
	Hidden Neurons	Epochs	Test error	Input			
	32	10	24.7	256			
	32	100	19,86	256			