

Regression Accuracies

Accuracies												
Dataset Name	Algorithm Used											
	ADMM based						Backpropagation					
	Converged @ Iteration	Train MAE	Train RMSE	Test MAE	Test RMSE	Time (sec)	Converged @ Iteration	Train MAE	Train RMSE	Test MAE	Test RMSE	Time (sec)
Boston	27	3.312524233	4.874624188	3.121743593	4.837774502	0.436435113	15000 (maxed out)	2.830437387	3.884546904	2.858037565	4.35589052	10.34649376
Linnerud	73	35.98378094	53.65476691	27.56317857	39.34062265	0.021515525	7500	35.89035094	53.68246973	26.99021784	39.4277716	2.449377804
Real estate valuation	14	6.258258728	9.031734978	5.942754256	8.258545372	0.02000243599	15000 (maxed out)	7.214100389	9.583968762	7.269482704	9.538061798	6.476510035
Energy efficiency	29	2.215426084	3.096988204	2.257468864	3.109990419	0.04889618701	15000 (maxed out)	3.140084821	3.963071908	3.083862183	3.902640598	6.607297865
Stock portfolio performance	10	0.09827888005	0.1230248584	0.1005804991	0.1247905116	0.01333570399	50	0.09958706117	0.1248680185	0.1012807464	0.1260942718	0.02123514
Concrete Slump Test	126	6.08568884	8.198571716	6.404466677	9.316460915	0.086310039	15000 (maxed out)	6.020188194	7.947972528	6.58247061	8.598203204	5.769138133
Daily Demand Forecasting Orders	20	0.001666899796	0.004844102851	12.04029648	22.27632629	0.091679858	15000 (maxed out)	65.49049494	75.61851996	68.59831012	86.56354272	7.066124994
Concrete Compressive Strength	615	8.333475056	10.49074969	7.946607505	10.02597678	1.21046256	15000 (maxed out)	6.487866097	7.980244794	6.226786837	7.452731385	6.834297493
Airfoil Self-Noise	3	24.86737377	30.35889867	25.73795038	31.51962377	0.006247040001	15000 (maxed out)	28.88359558	33.86332871	29.19335986	34.09586372	7.837339675
Challenger USA Space Shuttle O-Ring	4	0.248491169	0.357250113	0.2428476794	0.3171518091	0.00296591701	508	0.2965245527	0.416661362	0.2478271325	0.2896626883	0.199629203

Hyperparameter selection and dataset information						
Dataset Name	Input			Hyperparameters		
	Num Datapoints (Test + Train)	Input feature dimension	Output dimension	Hidden layer dimension	Threshold	mu
Boston	506 (127 + 379)	13	1	100	1.00E-03	1
Linnerud	20 (5 + 15)	3	3	2	1.00E-03	1
Real estate valuation	414 (104 + 310)	6	1	12	1.00E-03	1
Energy efficiency	768 (192 + 576)	8	2	6	1.00E-03	1
Stock portfolio performance	315 (79 + 236)	6	6	9	1.00E-03	1
Concrete Slump Test	103 (26 + 77)	7	3	4	1.00E-03	1
Daily Demand Forecasting Orders	60 (15 + 45)	12	1	91	1.00E-03	1
Concrete Compressive Strength	1030 (258 + 772)	8	1	6	1.00E-03	1
Airfoil Self-Noise	1503 (376 + 1127)	5	1	7	1.00E-03	1
Challenger USA Space Shuttle O-Ring	23 (6 + 17)	3	1	6	1.00E-03	1