

Table 1: Performance Results for LogisticRegression\100samplesn5featuresnreg0.01Problem

Optimizer	Mean Final Value	Std Dev	Best Value	Worst Value	Mean Func Evals	Success Rate (%)	Mean Time (s)
QQN-Backtracking	$3.15 \times 10^{-1}$	$3.11 \times 10^{-12}$	$3.15 \times 10^{-1}$	$3.15 \times 10^{-1}$	80.7	0.0	0.027
QQN-StrongWolfe	$3.15 \times 10^{-1}$	$3.28 \times 10^{-12}$	$3.15 \times 10^{-1}$	$3.15 \times 10^{-1}$	74.0	0.0	0.029
QQN-GoldenSection	$3.15 \times 10^{-1}$	$2.56 \times 10^{-12}$	$3.15 \times 10^{-1}$	$3.15 \times 10^{-1}$	317.9	0.0	0.068
QQN-Bisection-1	$3.15 \times 10^{-1}$	$3.04 \times 10^{-12}$	$3.15 \times 10^{-1}$	$3.15 \times 10^{-1}$	101.3	0.0	0.039
QQN-Bisection-2	$3.15 \times 10^{-1}$	$2.48 \times 10^{-12}$	$3.15 \times 10^{-1}$	$3.15 \times 10^{-1}$	98.0	0.0	0.031
QQN-MoreThuente	$3.15 \times 10^{-1}$	$2.58 \times 10^{-12}$	$3.15 \times 10^{-1}$	$3.15 \times 10^{-1}$	124.6	0.0	0.044
L-BFGS-Conservative	$3.15 \times 10^{-1}$	$8.61 \times 10^{-11}$	$3.15 \times 10^{-1}$	$3.15 \times 10^{-1}$	555.8	0.0	0.183
QQN-CubicQuadraticInterpolation	$3.15 \times 10^{-1}$	$7.41 \times 10^{-9}$	$3.15 \times 10^{-1}$	$3.15 \times 10^{-1}$	155.0	0.0	0.068
L-BFGS-Aggressive	$3.15 \times 10^{-1}$	$4.77 \times 10^{-4}$	$3.15 \times 10^{-1}$	$3.18 \times 10^{-1}$	561.9	0.0	0.150
L-BFGS	$3.16 \times 10^{-1}$	$1.21 \times 10^{-3}$	$3.15 \times 10^{-1}$	$3.21 \times 10^{-1}$	450.1	0.0	0.135
Adam-Fast	$3.16 \times 10^{-1}$	$1.09 \times 10^{-4}$	$3.16 \times 10^{-1}$	$3.16 \times 10^{-1}$	89.3	0.0	0.032
GD-Momentum	$3.33 \times 10^{-1}$	$5.94 \times 10^{-4}$	$3.32 \times 10^{-1}$	$3.35 \times 10^{-1}$	335.0	0.0	0.182
GD-Nesterov	$3.34 \times 10^{-1}$	$5.50 \times 10^{-4}$	$3.33 \times 10^{-1}$	$3.34 \times 10^{-1}$	335.0	0.0	0.182
Trust Region-Conservative	$4.24 \times 10^{-1}$	$2.45 \times 10^{-3}$	$4.19 \times 10^{-1}$	$4.27 \times 10^{-1}$	87.2	0.0	0.026
GD-WeightDecay	$4.49 \times 10^{-1}$	$6.87 \times 10^{-3}$	$4.35 \times 10^{-1}$	$4.60 \times 10^{-1}$	335.0	0.0	0.183
Adam-WeightDecay	$4.66 \times 10^{-1}$	$1.45 \times 10^{-2}$	$4.48 \times 10^{-1}$	$4.95 \times 10^{-1}$	502.0	0.0	0.181
GD	$5.55 \times 10^{-1}$	$1.32 \times 10^{-2}$	$5.27 \times 10^{-1}$	$5.78 \times 10^{-1}$	335.0	0.0	0.181
Adam	$5.95 \times 10^{-1}$	$2.74 \times 10^{-2}$	$5.45 \times 10^{-1}$	$6.40 \times 10^{-1}$	502.0	0.0	0.180
Adam-AMSGrad	$5.98 \times 10^{-1}$	$2.59 \times 10^{-2}$	$5.59 \times 10^{-1}$	$6.48 \times 10^{-1}$	502.0	0.0	0.181
Trust Region-Adaptive	$6.96 \times 10^{-1}$	$2.25 \times 10^{-2}$	$6.48 \times 10^{-1}$	$7.31 \times 10^{-1}$	5.0	0.0	0.002
Trust Region-Standard	$6.97 \times 10^{-1}$	$2.76 \times 10^{-2}$	$6.40 \times 10^{-1}$	$7.52 \times 10^{-1}$	5.0	0.0	0.002