

Table 1: Performance Results for NoisySphere_5D_sigma0.01 Problem

Optimizer	Mean Final Value	Std Dev	Best Value	Worst Value	Mean Func Evals	Success Rate (%)	Mean Time (s)
QQN-Bisection-1	4.46e0	9.06e-1	2.43e0	6.17e0	75.7	45.0	0.011
L-BFGS-Conservative	4.42e0	1.19e-1	4.14e0	4.57e0	120.3	85.0	0.004
Adam	5.42e0	2.68e-1	4.73e0	5.93e0	26.1	0.0	0.003
Adam-AMSGrad	5.42e0	3.72e-1	4.94e0	6.37e0	18.6	0.0	0.002
Adam-Robust	5.11e0	3.42e-1	4.60e0	5.73e0	17.1	0.0	0.002
L-BFGS	1.44e1	8.91e0	2.91e0	3.12e1	38.4	20.0	0.002
Adam-WeightDecay	5.22e0	3.07e-1	4.62e0	5.81e0	16.6	0.0	0.002
GD	5.52e0	8.70e-1	4.36e0	6.84e0	9.2	20.0	0.002
GD-Momentum	5.71e0	9.79e-1	4.41e0	7.61e0	7.9	25.0	0.001
L-BFGS-Limited	3.90e0	8.53e-1	2.63e0	5.48e0	35.4	55.0	0.001
Adam-Fast	5.99e0	1.16e0	4.17e0	8.14e0	11.7	10.0	0.001
GD-AdaptiveMomentum	5.68e0	8.70e-1	4.36e0	7.22e0	7.0	15.0	0.001
L-BFGS-MoreThuente	4.61e0	8.49e-1	3.27e0	5.99e0	12.3	25.0	0.001
GD-Nesterov	5.61e0	1.00e0	4.26e0	6.77e0	6.8	30.0	0.001
GD-WeightDecay	5.35e0	6.50e-1	4.47e0	6.45e0	6.5	25.0	0.001
QQN-StrongWolfe	3.67e0	1.35e0	1.11e0	5.33e0	18.9	45.0	0.001
QQN-GoldenSection	4.88e0	7.47e-1	3.49e0	6.27e0	21.2	10.0	0.001
QQN-CubicQuadraticInterpolation	5.26e0	3.22e-1	4.75e0	5.60e0	7.2	0.0	0.001
Trust Region-Precise	5.28e0	4.50e-1	4.65e0	6.08e0	6.5	0.0	0.001
Trust Region-Conservative	5.20e0	3.98e-1	4.59e0	5.78e0	5.7	0.0	0.000
Trust Region-Standard	5.20e0	3.94e-1	4.73e0	6.28e0	4.2	0.0	0.000
Trust Region-Adaptive	5.32e0	3.69e-1	4.65e0	6.03e0	3.5	0.0	0.000
L-BFGS-Aggressive	5.18e0	4.15e-1	4.66e0	5.74e0	4.2	0.0	0.000
Trust Region-Aggressive	5.27e0	3.43e-1	4.65e0	5.82e0	3.5	0.0	0.000