

Table 1: Performance Results for NoisySphere\5Dn_{sigma}0.01Problem

Optimizer	Mean Final Value	Std Dev	Best Value	Worst Value	Mean Func Evals	Success Rate (%)	Mean Time (s)
GD-WeightDecay	4.74	1.30	1.53	6.35	17.7	5.0	0.003
GD-Momentum	5.14	1.39	8.76×10^{-1}	7.12	16.4	5.0	0.003
GD-Nesterov	5.27	9.47×10^{-1}	2.36	6.41	14.1	5.0	0.002
L-BFGS	1.77×10^1	7.02	7.79	3.46×10^1	59.0	5.0	0.002
L-BFGS-Conservative	1.97	8.53×10^{-1}	4.05×10^{-1}	3.61	827.2	0.0	0.027
QQN-Bisection-1	3.44	1.20	4.02×10^{-1}	5.76	133.2	0.0	0.021
QQN-StrongWolfe	3.96	1.04	2.23	5.54	37.8	0.0	0.002
QQN-CubicQuadraticInterpolation	4.33	1.18	1.72	6.29	38.8	0.0	0.005
QQN-GoldenSection	4.35	1.23	4.51×10^{-1}	5.95	24.0	0.0	0.001
QQN-Backtracking	4.53	1.34	9.95×10^{-1}	5.71	202.2	0.0	0.009
Adam-AMSGrad	4.84	5.90×10^{-1}	3.87	5.97	25.5	0.0	0.003
QQN-MoreThuente	4.89	5.00×10^{-1}	4.11	5.57	17.9	0.0	0.002
L-BFGS-Aggressive	4.90	4.51×10^{-1}	4.14	5.83	7.4	0.0	0.000
Adam	4.98	5.43×10^{-1}	4.27	6.24	35.4	0.0	0.004
Trust Region-Adaptive	4.99	5.64×10^{-1}	4.24	6.25	5.0	0.0	0.000
GD	5.13	8.46×10^{-1}	2.81	6.87	14.7	0.0	0.002
Trust Region-Standard	5.15	4.21×10^{-1}	4.27	5.97	5.0	0.0	0.000
Adam-WeightDecay	5.15	5.43×10^{-1}	4.02	6.00	28.6	0.0	0.003
Trust Region-Conservative	5.25	5.01×10^{-1}	4.08	5.99	6.3	0.0	0.000
Adam-Fast	5.54	1.46	2.65	8.73	22.4	0.0	0.002