

Table 1: Performance Results for Barrier_2D_mu0.1 Problem

Optimizer	Mean Final Value	Std Dev	Best Value	Worst Value	Mean Func Evals	Success Rate (%)	Mean Time (s)
Adam-Robust	4.09e-1	7.17e-3	4.00e-1	4.27e-1	2502.0	0.0	0.056
Adam-AMSGrad	4.13e-1	1.06e-2	4.01e-1	4.31e-1	2502.0	0.0	0.056
Adam	4.00e-1	1.38e-4	4.00e-1	4.00e-1	2502.0	0.0	0.051
Adam-WeightDecay	4.00e-1	2.27e-9	4.00e-1	4.00e-1	1498.4	0.0	0.032
L-BFGS-Conservative	4.00e-1	5.47e-8	4.00e-1	4.00e-1	880.4	0.0	0.023
GD	4.00e-1	2.64e-11	4.00e-1	4.00e-1	292.1	0.0	0.007
Trust Region-Conservative	4.61e-1	7.55e-2	4.00e-1	6.13e-1	494.1	0.0	0.003
L-BFGS-Limited	4.00e-1	2.73e-3	4.00e-1	4.12e-1	140.3	0.0	0.003
GD-WeightDecay	4.00e-1	6.36e-6	4.00e-1	4.00e-1	49.0	0.0	0.002
Trust Region-Precise	4.55e-1	1.16e-1	4.00e-1	8.14e-1	96.7	0.0	0.001
Adam-Fast	5.15e-1	2.22e-2	4.74e-1	5.54e-1	31.4	0.0	0.001
GD-Nesterov	5.03e-1	1.17e-2	4.85e-1	5.26e-1	20.4	0.0	0.001
GD-Momentum	5.05e-1	2.44e-2	4.82e-1	5.80e-1	20.9	0.0	0.001
Trust Region-Adaptive	4.54e-1	9.24e-2	4.00e-1	7.59e-1	24.1	0.0	0.000
Trust Region-Standard	7.17e-1	4.33e-1	4.00e-1	1.64e0	10.2	0.0	0.000
GD-AdaptiveMomentum	4.65e-1	4.95e-3	4.60e-1	4.70e-1	1.6	0.0	0.000
Trust Region-Aggressive	2.25e0	2.02e0	5.85e-1	5.05e0	3.4	0.0	0.000