Table 1: Performance Results for Beale_2D Problem

Optimizer	Mean Final Value	Std Dev	Best Value	Worst Value	Mean Func Evals	Success Rate (%)	Mean Time (s)
GD-Nesterov	9.18e-3	2.78e-3	4.69e-3	1.44e-2	27.7	100.0	0.001
L-BFGS-MoreThuente	8.71e-3	4.80e-3	3.68e-4	1.50e-2	78.1	100.0	0.001
GD-WeightDecay	1.48e-2	1.25e-4	1.46e-2	1.49e-2	88.0	100.0	0.003
L-BFGS-Limited	1.00e-2	4.71e-3	3.68e-4	1.49e-2	110.5	100.0	0.002
L-BFGS-Conservative	1.17e-2	2.95e-3	5.27e-3	1.49e-2	200.7	100.0	0.005
GD	1.49e-2	4.62e-5	1.49e-2	1.50e-2	229.2	100.0	0.006
QQN-GoldenSection	6.90e-3	2.42e-3	2.42e-3	9.87e-3	347.2	100.0	0.005
Adam-WeightDecay	1.50e-2	2.32e-5	1.49e-2	1.50e-2	1539.9	100.0	0.033
QQN-CubicQuadraticInterpolation	4.97e-1	2.13e0	2.46e-3	9.79e0	218.8	95.0	0.008
QQN-Bisection-1	4.13e-1	1.77e0	4.49e-3	8.13e0	277.4	95.0	0.006
QQN-StrongWolfe	4.59e-1	1.93e0	3.96e-3	8.88e0	786.0	90.0	0.023
GD-AdaptiveMomentum	3.09e-1	7.01e-1	6.42e-4	2.11e0	25.5	80.0	0.001
QQN-Bisection-2	2.61e0	3.98e0	3.70e-3	9.20e0	83.8	70.0	0.002
L-BFGS	4.55e-1	8.11e-1	1.99e-3	3.15e0	122.0	65.0	0.002
Trust Region-Precise	2.17e-2	1.24e-2	3.20e-3	4.17e-2	743.8	45.0	0.005
Trust Region-Aggressive	1.23e0	4.13e-1	1.33e-3	1.91e0	17.8	5.0	0.000
GD-Momentum	1.32e0	9.54e-1	1.20e-2	2.68e0	24.4	5.0	0.001
Trust Region-Conservative	4.33e0	3.19e0	9.92e-3	1.29e1	2999.7	5.0	0.017
Adam	7.19e-2	3.00e-2	3.04e-2	1.57e-1	2502.0	0.0	0.048
Trust Region-Adaptive	1.27e-1	1.01e-1	3.79e-2	5.20e-1	179.6	0.0	0.001
Adam-AMSGrad	2.17e-1	7.60e-2	8.70e-2	3.95e-1	2502.0	0.0	0.056
Trust Region-Standard	2.71e2	1.18e3	1.24e-1	5.41e3	50.2	0.0	0.000
Adam-Robust	4.58e-1	2.48e-1	1.68e-1	1.07e0	2502.0	0.0	0.054
Adam-Fast	1.59e0	1.58e-1	1.39e0	1.86e0	37.6	0.0	0.001
L-BFGS-Aggressive	1.39e1	3.00e0	8.86e0	2.02e1	3851.9	0.0	0.021