Table 1: Performance Results for StyblinskiTang_2D Problem

Optimizer	Mean Final Value	Std Dev	Best Value	Worst Value	Mean Func Evals	Success Rate (%)	Mean Time (s)
QQN-GoldenSection	-7.69e1	4.24e0	-7.83e1	-6.42e1	159.8	90.0	0.002
L-BFGS-Conservative	-7.69e1	4.23e0	-7.83e1	-6.42e1	300.1	90.0	0.007
Adam-WeightDecay	-7.55e1	5.64e0	-7.83e1	-6.42e1	1893.5	80.0	0.042
QQN-Bisection-2	-7.48e1	6.12e0	-7.83e1	-6.42e1	99.0	75.0	0.002
L-BFGS-MoreThuente	-7.41e1	6.47e0	-7.83e1	-6.42e1	54.1	70.0	0.001
QQN-CubicQuadraticInterpolation	-7.34e1	8.08e0	-7.83e1	-5.01e1	74.5	70.0	0.002
QQN-Bisection-1	-7.40e1	7.84e0	-7.83e1	-5.01e1	385.6	70.0	0.007
L-BFGS-Limited	-7.41e1	6.48e0	-7.83e1	-6.42e1	500.0	70.0	0.006
Trust Region-Adaptive	-7.37e1	1.73e1	-7.83e1	3.85e-1	885.1	70.0	0.006
GD	-7.34e1	6.73e0	-7.83e1	-6.42e1	66.5	65.0	0.002
QQN-StrongWolfe	-7.34e1	6.74e0	-7.83e1	-6.42e1	284.4	65.0	0.008
L-BFGS	-7.32e1	7.01e0	-7.83e1	-5.78e1	132.3	50.0	0.002
Trust Region-Standard	6.01e1	5.78e2	-7.83e1	2.58e3	212.3	40.0	0.001
GD-WeightDecay	-7.46e1	6.18e0	-7.83e1	-6.37e1	39.9	35.0	0.001
Adam-Fast	-7.48e1	4.67e0	-7.83e1	-6.16e1	67.3	35.0	0.001
Trust Region-Aggressive	-6.43e1	2.56e1	-7.83e1	3.64e-1	49.3	20.0	0.000
GD-Momentum	-5.68e1	1.59e1	-7.83e1	-2.48e1	35.9	15.0	0.001
GD-Nesterov	-6.56e1	1.28e1	-7.83e1	-3.59e1	29.1	10.0	0.001
GD-AdaptiveMomentum	-3.87e1	1.37e1	-7.83e1	-1.65e1	24.4	5.0	0.001
L-BFGS-Aggressive	-5.13e1	1.89e1	-7.77e1	-4.63e0	3848.1	0.0	0.025
Trust Region-Precise	-6.26e1	4.27e-1	-6.35e1	-6.22e1	3002.0	0.0	0.019
Adam	-2.94e1	2.68e0	-3.47e1	-2.46e1	2502.0	0.0	0.049
Adam-AMSGrad	-3.03e1	1.58e0	-3.29e1	-2.78e1	2502.0	0.0	0.058
Adam-Robust	-2.07e1	2.26e0	-2.44e1	-1.49e1	2502.0	0.0	0.057
Trust Region-Conservative	-1.02e1	4.38e-1	-1.15e1	-9.64e0	3002.0	0.0	0.019