The EXPUTIL Test Problems

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The exputil test problem suite consists of 9 instances of a single-stage nonlinear stochastic 0-1 problem, specifically an expected utility knapsack problem. The problem formulation is described in [1].

The data for the instances are contained in the zip folder exputil.zip. Please refer to README.txt in the folder for problem formulation and data format. The instances and their optimal values are listed in the following table. The instances are named as exputil_n_m where n is the number of binary variables, and m is the number of scenarios.

Instance	Optimal Value
exputil_25_100	-0.242304
exputil_25_500	-0.246211
exputil_25_1000	-0.242750
exputil_50_100	-0.246343
exputil_50_500	-0.247751
exputil_50_1000	-0.247643
exputil_100_100	-0.247542
exputil_100_500	-0.248989
exputil_100_1000	-0.249317

REFERENCE:

[1] Shabbir Ahmed and Alper Atamturk. Maximizing a class of submodular utility functions. *Mathematical Programming*, 128(1-2):149–169, 2011.

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