
Learning to Optimize in Swarms

(Supporting Information)

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1 Supplemental Results

1.1 Learn to optimize convex quadratic functions

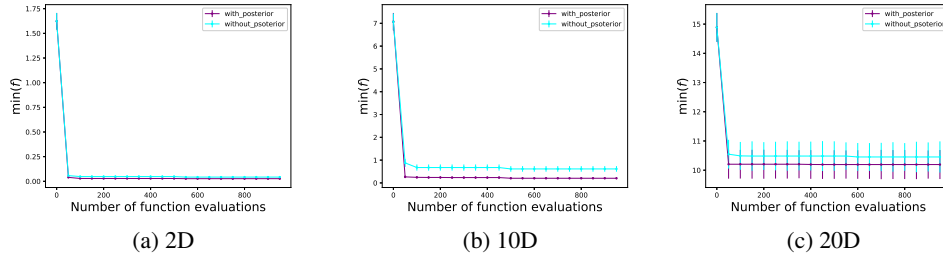


Figure S1: The performance of our meta-optimizer for convex quadratic functions, with or without the posterior term in meta loss.

1.2 Transferability: Learning to optimize non-convex Rastrigin functions from convex optimization

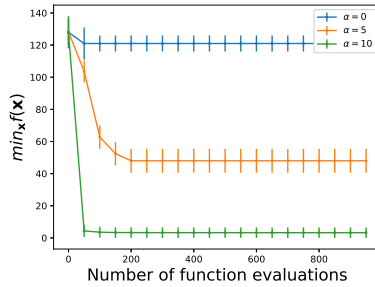


Figure S2: Optimization performance for the 10D Rastrigin function ($\alpha = 10$) when the meta-optimizer is trained using Rastrigin family with increasing α (thus increasing ruggedness). $\alpha = 0$ corresponds to convex training functions.

2 Training Examples for Protein Docking

Difficulty level	Protein Data Bank (PDB) code
Rigid	1N8O , 7CEI , 1DFJ , 1AVX , 1BVN , 1IQD , 1CGI , 1MAH , 1EZU , 1JPS , 1PPE , 1R0R , 2I25 , 2B42 , 1EAW , 2JEL , 1BJ1 , 1KXQ , 1EWY
Medium	1XQS, 1M10, 1IJK, 1GRN
Flexible	1IBR, 1ATN

Table S1: 4-letter ID of proteins used in the training set.