

AutoML Challenge: AutoML Framework Using Random Space Partitioning Optimizer

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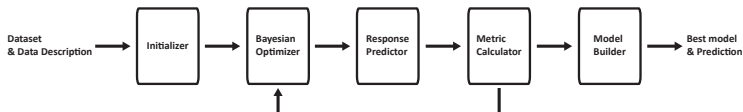
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Our Architecture, *postech.mlg_exbrain*

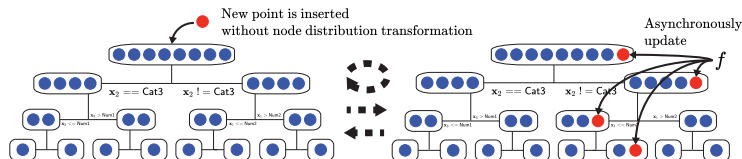
- ▶ The based system, *auto-sklearn* (Feurer *et al.*, 2015)
 - ▶ Four components; meta-learning initializer, Bayesian optimizer, machine learning framework, and ensemble builder
 - ▶ Bayesian optimizer, SMAC (Hutter *et al.*, 2010)
- ▶ Our system



- ▶ Five components; meta-learning initializer, Bayesian optimizer, response predictor, metric calculator, and model builder
- ▶ Our optimizer, Mondrian Forests Optimizer



Mondrian Forests Optimizer



- ▶ Random space partitioning optimizer
- ▶ Extended from Mondrian forests regression (Lakshminarayanan *et al.*, 2016)
- ▶ Handle all variables such as categorical and numerical variables
- ▶ Run on both Mondrian forests optimizer and actual response sampler in parallel



AutoML Challenge Results

Final3		Final4		AutoML5	
Team	Rank	Team	Rank	Team	Rank
aad.freiburg	1 (1.80)	aad.freiburg	1 (1.60)	aad.freiburg	1 (1.60)
djajetic	2 (2.00)	ideal.intel.analytics	2 (3.60)	djajetic	2 (2.60)
ideal.intel.analytics	3 (3.80)	abhishek4	3 (5.40)	postech.mlg_exbrain	3 (4.60)
asml.intel.com	3 (3.80)	postech.mlg_exbrain	4 (5.80)		
postech.mlg_exbrain	4 (5.40)				



Please stop by our poster!

