

Notes on Tree Construction

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Notation

The **Maximum-Entropy Sampling Problem** is defined by the following mathematical program:

$$z(C, s) := \max \{ \text{ldet } C[S, S] : S \subset N, |S| = s \}$$

- Let \mathcal{L} be the list of open
- $\mathbf{ub}L \equiv \mathbf{ub}(L)$ be the value of a selected upper-bounding method applied to $L \in \mathcal{L}$
- $z^{UB} = \max \{ \}$

Algorithm 1: Solve Tree

```
 $k = 0, d_0 = 1, C = 0;$ 
for  $k = 0, 1, 2, \dots$  do
   $C = C + d_k C(\alpha_k)$ 
   $n_k = |D(\alpha_k)|;$ 
  if  $n_k = 0$  then
    return  $C;$ 
  else
    choose  $\alpha_{k+1}$  at random from  $D(\alpha_k)$ 
     $d_{k+1} = d_k n_k;$ 
  end
end
```
