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MHs: "how to go downhill smartly"
Two ways right now:
Two ways right now: 11) Hill Climbing with Random Restarts MH #5
MH #3
best = random solution
Tuhile True: X = random solution
for some amount of time:
for some amount of time: S = tweak(x)
if $score(s) > score(x)$:
if score(x) > score(best): best = x
Dest = x
(2) Probabilistic Hill-Climbing
(2) Probabilistic Hill-Climbing You look at a bunch of tweaks, pick one at random, weighted according to score.
pick one at random, Weighted
activity 10 Stort.

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Topic #13 - Simulated Annealing
SA: worsening moves are allowed with some probability
with some probability
change over time
At the start, the system has a high temperature -> worsening moves are accepted with high probability
temperature -> worsening moves are
accepted with high probability
The system cools over time, that
The system cools over time, that probability decreases
Very high temp: basically random search (explorative) Very low temp: basically hill climbing
(explorative)
Very low temp: hosically hill climbing
Idea: As the system is cooling, you hope
to wander onto a good hill and then
Idea: As the system is cooling, you hope to wander onto a good hill and then stay there.
J

Technical Details: (max)
Acceptance Conditions: Suppose the current temp is T. Let $s = tweak(x)$ and $\Delta = score(s)$
>(0/9/X
If D>0, improvement, always accept. If D=0, accept with some prob.
$P = e^{D/T}$
(Boltzmann distr.)
High T => Small D/T => p close to 1 +negative => high prob of accepting
accepting
* If minimizing: P = e-D/T.