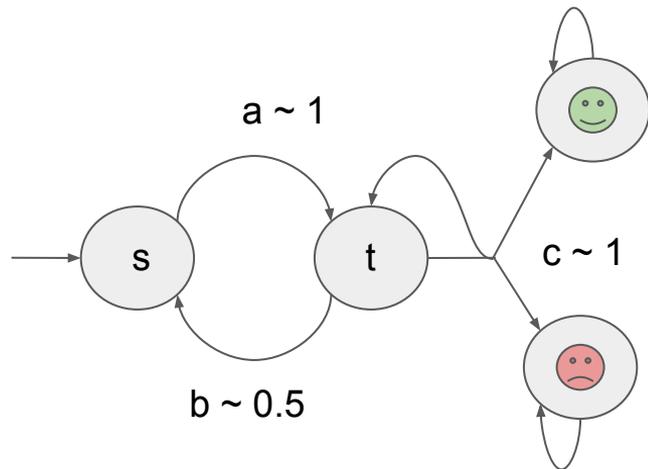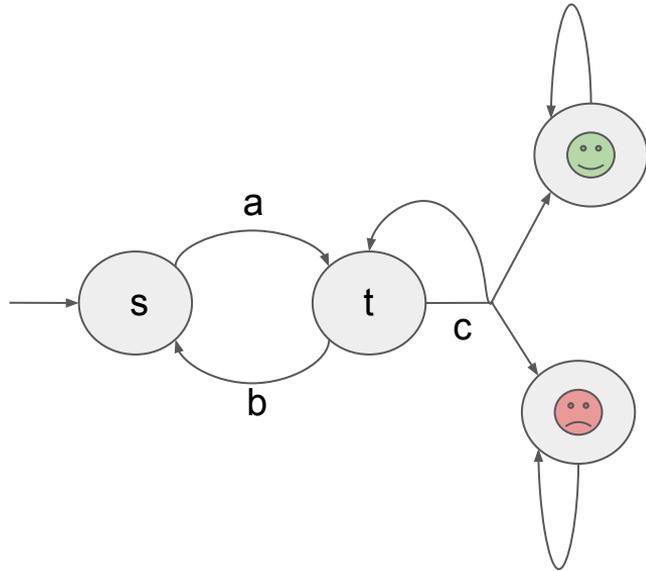# Reinforcement Learning with Decision Trees

$$\sum_{i=1}^{\infty} \gamma^i R(s_i)$$

$$V(s) = \max_a \left(R(s,a) + \gamma \sum_{s'} P(s,a,s')V(s') \right)$$
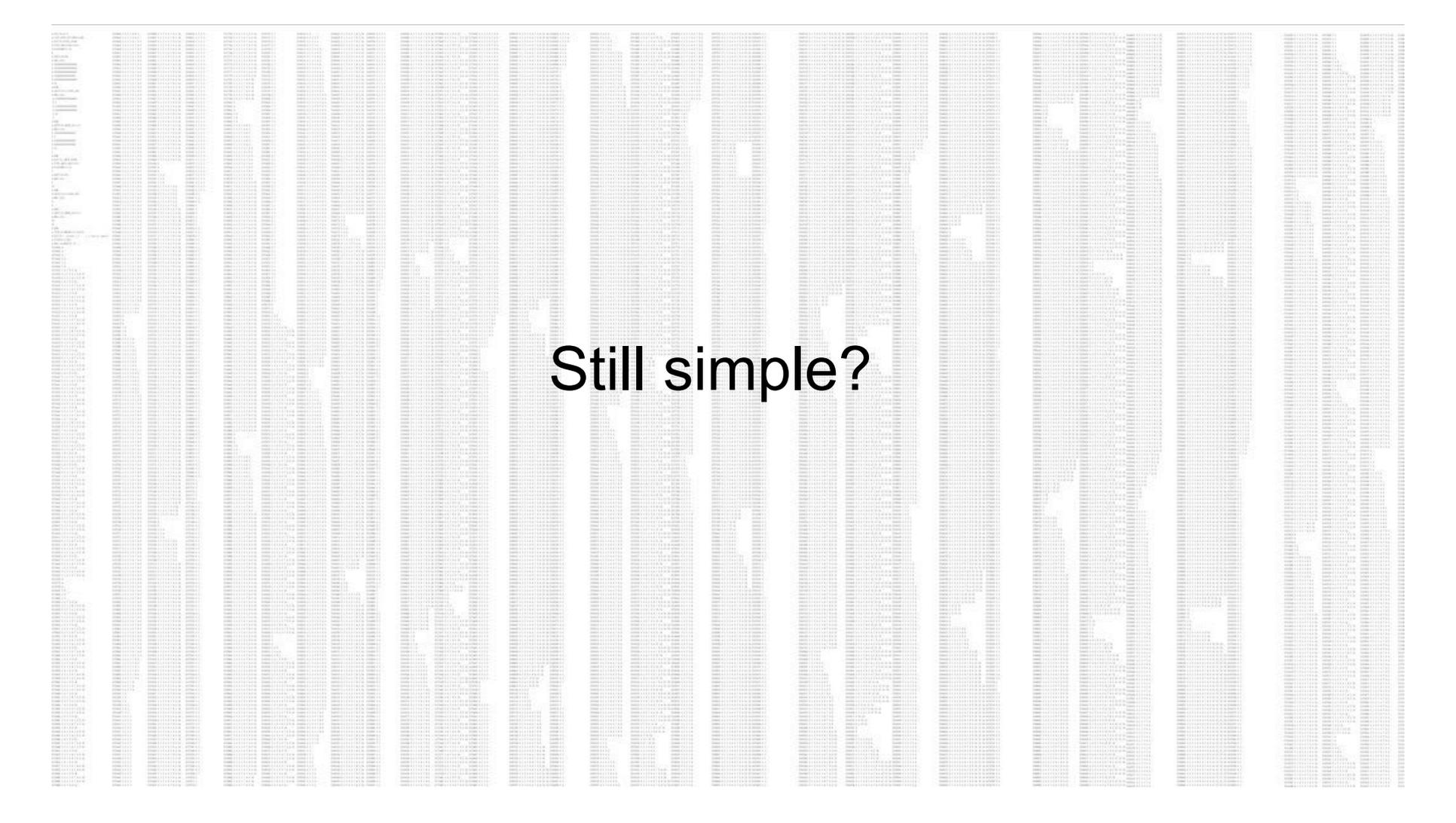
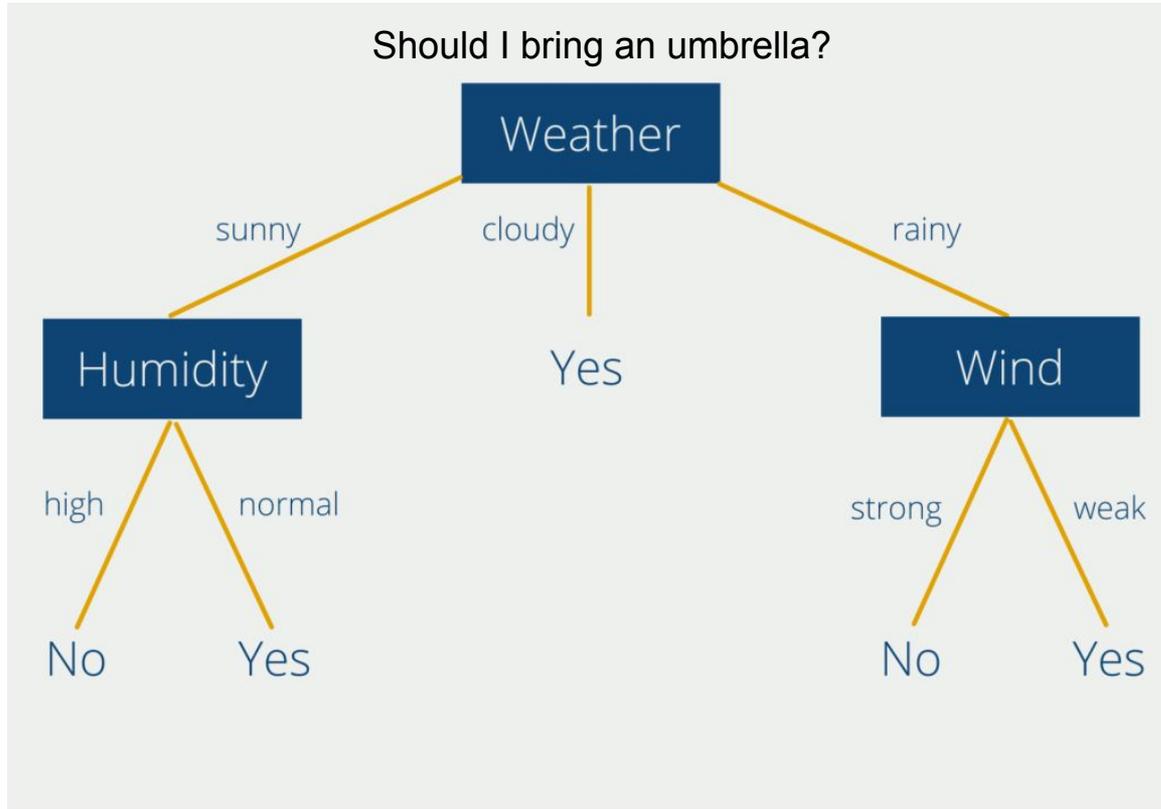# Reinforcement Learning with Decision Trees

Optimal Strategy:
s - a
t - c

=> Still simple enough

Still simple?

Reinforcement Learning with Decision Trees

Should I bring an umbrella?

Reinforcement Learning with Decision Trees

Two Papers:

Decision Tree Function Approximation in Reinforcement Learning

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October 15, 1998

Technical Report CS-98-112

Conservative Q-Improvement: Reinforcement Learning for an Interpretable Decision-Tree Policy

Aaron M. Roth[1] , Nicholay Topin[2] , Pooyan Jamshidi[3] and Manuela Veloso[2]