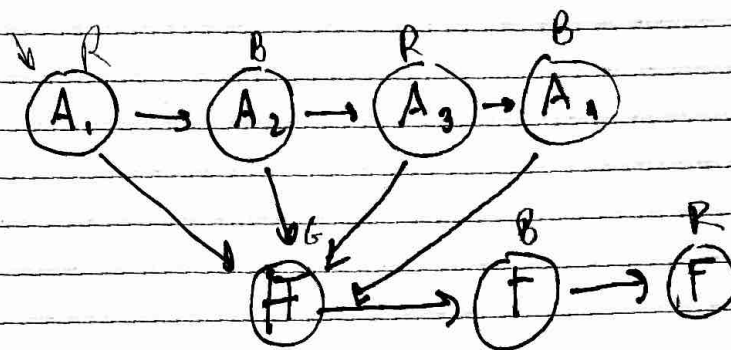


Robert Choe



A ₁	A ₂	A ₃	A ₄	H	H	T	F
RGB	RGB	RGB	RGB	RGB	RGB	RGB	RGB
R	GB	RGB	RGB	GB	RGB	RGB	RGB
R	B	R	B	G	RB	RGB	RGB
R	B	R	B	G	B	B	R

$A_1 = R$ $A_2 = B$ $A_3 = R$ $A_4 = B$ $H = G$ $T = B$ $F = R$

Untitled

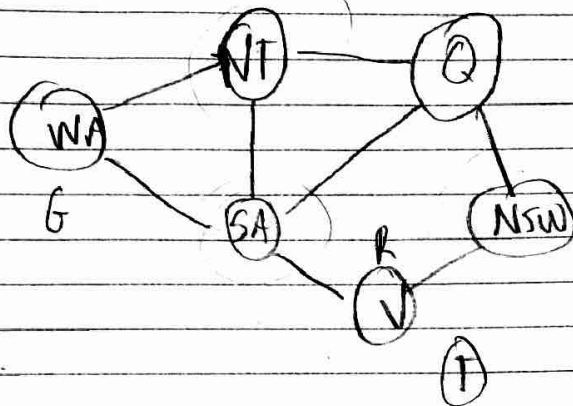
November 1, 2018

1 Problem 6.9

Explain why it is a good heuristic to choose the variable that is most constrained but the value that is least constraining in a CSP search.

Let's represent the CSP as a graph where the nodes are the variables and edges represent constraints. We want to choose the most constrained variable because that is the variable that is most likely to cause a failure soon. With this knowledge we choose this variable so we can prune the search tree early. We want to choose the value for that is least constraining because it will rule out the fewest values in the remaining variables, which will cause the search tree less likely to fail and more likely to find a solution faster.

Robert Choe



ARCS
 $WA \rightarrow NT, WA \rightarrow SA, NT \rightarrow Q,$
 $NT \rightarrow SA,$

WA	NT	Q	NSW	V	SA	T
G	RB	R B	G-B	R	RB	R G-B
G	R B	R-B	G -B	R	RB	R-G-B
G	R B	R-B	G	R	R B	R G-B
G	RB	R B	G	R	B	R-G-B
G	R B	R	G	R B	B	R-G-B
G	B	R	G	R	R	R-G-B
G	<div style="border: 1px solid black; width: 50px; height: 30px; display: flex; align-items: center; justify-content: center;"> </div>	R	G	R	B	R-G-B

Empty, \rightarrow Detected inconsistency!