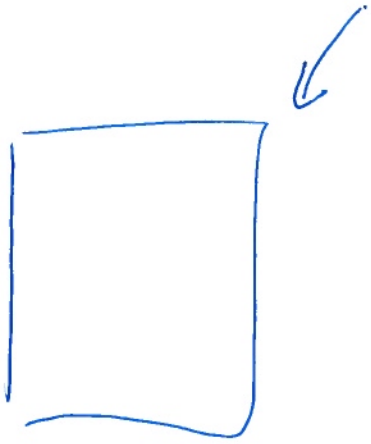
CS4811
April 17, 2017
Monday



logic
↙ ↘
T F

⟶ probabilistic
$p(T) = 0.5$
- - - -
fake coin
$p(T) = 0.9$

$p(A \wedge B) = p(B)\, p(A|B)$
$p(A \vee B)$

independent
$= p(A)$

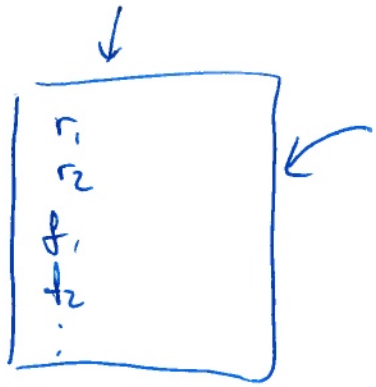
$p(A \wedge B) = p(A) \cdot p(B)$

$p(A \rightarrow B) = p(\neg A \vee B)$

$p(B \rightarrow A) = p(\neg B \vee A) \neq p(A|B)$

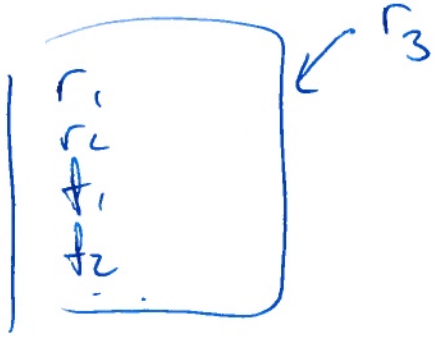
1. quantitative
2. two-valued logic : T, F

unknown



} make (possibly) more inferences

inferences grow monotonically



nonmonotonic logics

DB of bank accounts

a_1	+100	
a_2	−100	
a_3	+1000	2:00 am
snapshot → a_1	$+ i_1$	
a_2	$+ i_2$	2:30 am
a_3	$+ i_3$	
a_1	+ 50	
redo a_4	− 25	
		9:00 am

"go back" logs

—

chronological backtracking.

backtrack based on inference sequence.

dark chocolate

	too dark
nice	
50%	~ 4
85.7	~ 10
90%	~ 4

x $T(x \text{ too dark})$

% $T(x \text{ nice})$