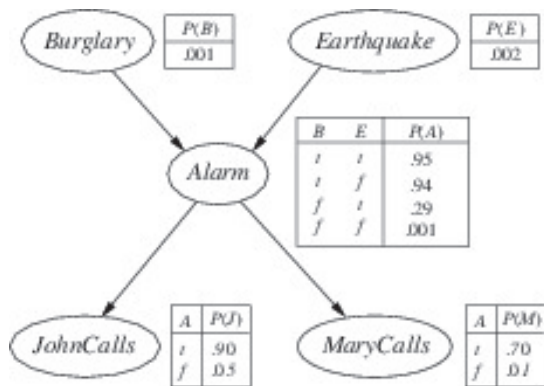# CS 4100/5100: Foundations of AI
Bayesian Networks

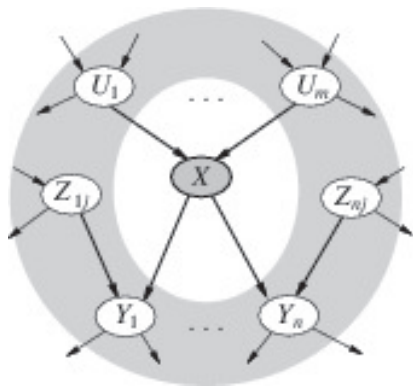Instructor: Rob Platt
r.platt@neu.edu

College of Computer and information Science
Northeastern University
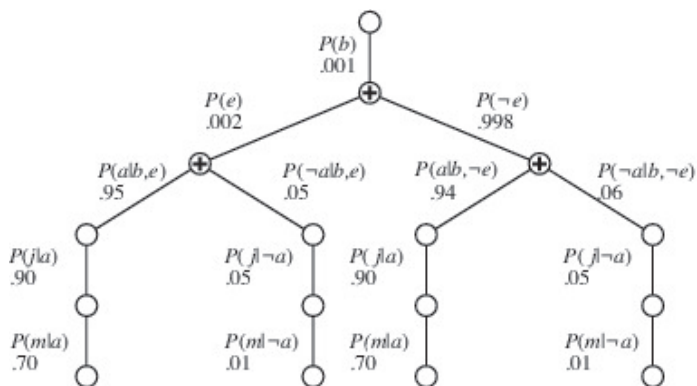
September 5, 2013
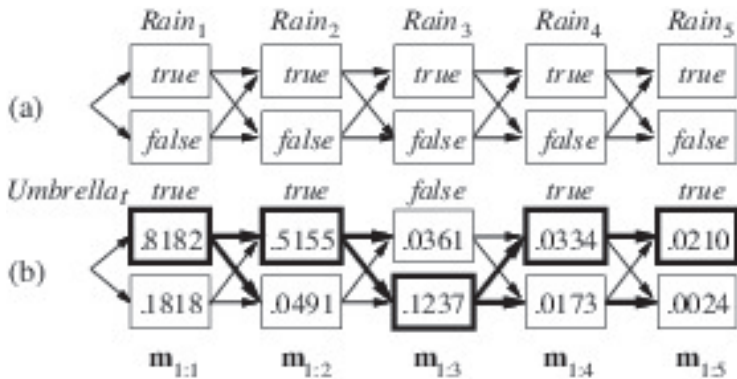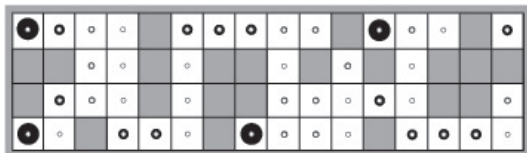
Burglary Bayesian Network

The Markov Blanket

Exact inference by enumeration
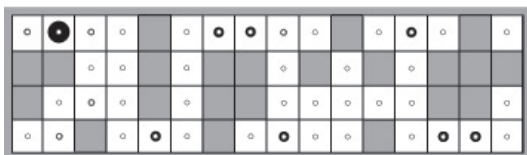
Viterbi example

HMM robot example

(a) Posterior distribution over robot location after $E_1 = NSW$

(b) Posterior distribution over robot location after $E_1 = NSW$, $E_2 = NS$

Kalman 1

(a) 2D filtering (b) 2D smoothing