Bayes Nets

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- Probabilistic models
  - Link of nodes that depend on each other
  - Probability of events happen dependent on each other.
- Bayes nets:
  - Diagnostic reasoning:
    - inverse of the cause of reasoning
  - Bayes rule
    - $P(A|B) = \frac{P(B|A)P(A)}{P(B)}$
    - $P(\neg A|B) = \frac{P(B|A)P(A)}{P(B)}$
    - $P'(A|B) = P(B|A)P(A)$
    - $P'(\neg A|B) = P(B|\neg A)P(\neg A)$
    - $P(A|B) = \eta P'(A|B)$
    - $P(\neg A|B) = \eta P'(\neg A|B)$
    - $\eta = (P'(A|B) + P'(\neg A|B))^{-1}$
  - Conditional independence
    - Stochastic: randomly determined- having a random probability distribution that maybe analyzed statistically but may not be predicted precisely
    - Conditional independence only holds true if we know c then the childrenare cut off
  - Conditional dependence
    - Knowledge of H makes 2 variables that were independent non-independent
    - Variables that are independent may not - be incertain cases