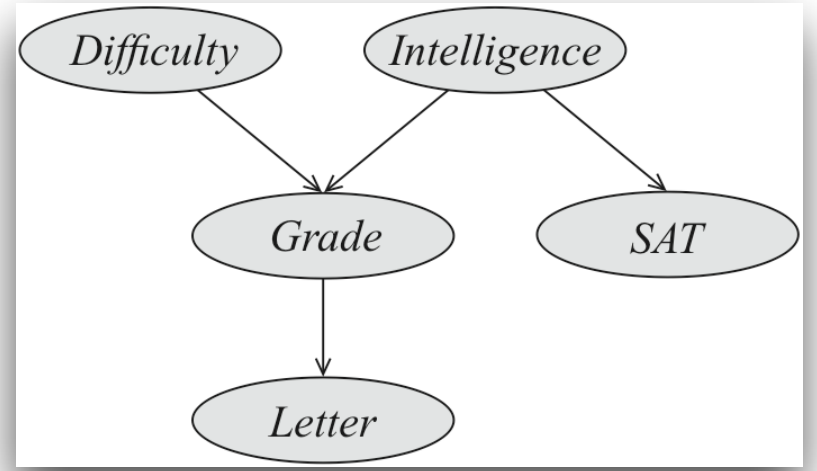
Royal Institute of Technology

DGM INDEPENDENCE APPLIED MARGINAL

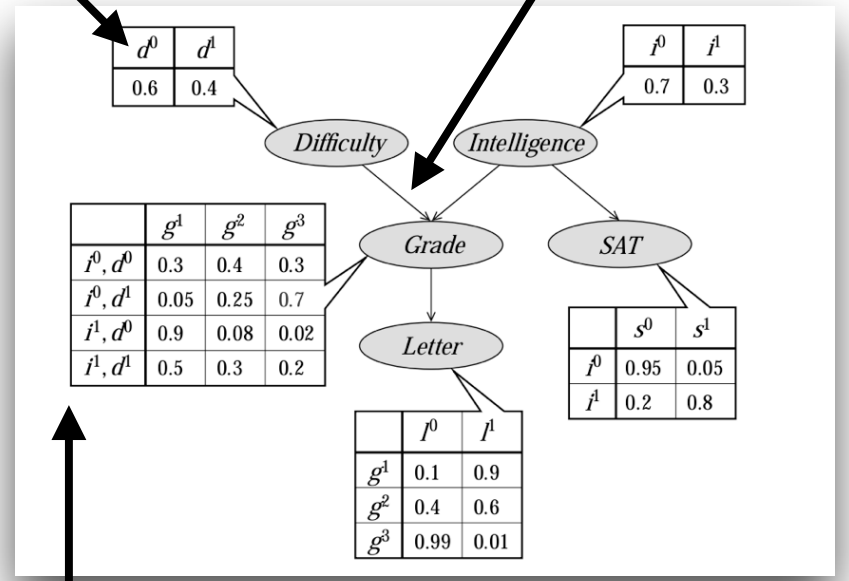
DGM - GRAPH AND CPDS VS JOINT



P(D,I,G,S,L)

d has value 0

DAG

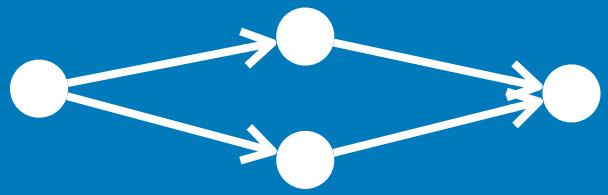


CPD (Conditional Prob. Dist.)

- CPD - table, i.e., categorical
- Gaussian

WHEN ARE X AND Y CONDITIONALLY INDEPENDENT?

$$p(x_1, \ldots, x_N) = \prod_{n=1}^{N} p(x_n | \boldsymbol{x}_{\mathrm{pa}(x_n)})$$



AN HMM CAN BE SEEN AS A DGM

- Z_i hidden
- X_i observable
- Hidden often not observable when training, never when applying