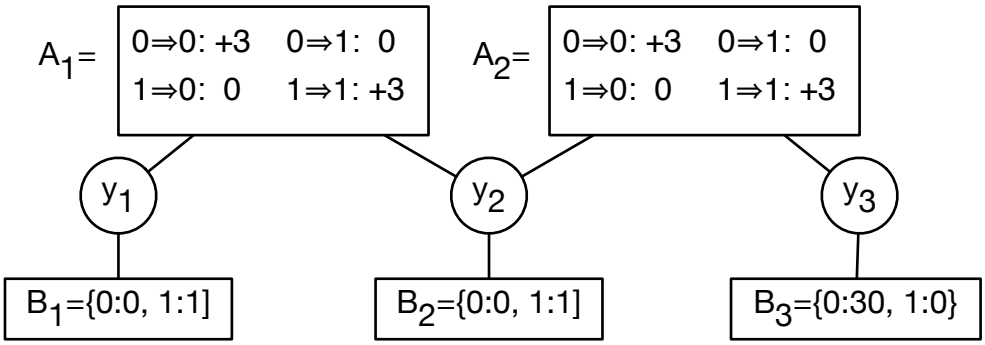
CS690N Viterbi exercise: 3/29/18



Sticky-favoring model over hidden state vocab {0,1}. Factor scores are "goodness points" are in log-scale additive form. (They're positive, though for an HMM they would all be negative.)

log P(y | w) = (constant) + G(y1, y2, y3)

G(y1, y2, y3) = A(y1,y2) + A(y2,y3) + B1(y1) + B2(y2) + B3(y3)

inference goal: argmax$_y$ G(y)

Additive Viterbi

For t=1..T,

For k in {0,1},

$$V_t[k] := \max_j \left(V_{t-1}[j] + A(j,k) + B_t(k)\right)$$

$$B[k] := \arg\max_j (\ldots)$$

For t=1, set A_0(anything)=0 and V_0[anything]=0

Final backtrace step: take best-scoring from last V_T, follow the backpointers all the way back

Run Viterbi and fill out the trellis with arcs like in the textbook's HMM example.

Most probable sequence y* = (, ,) G(y*) =