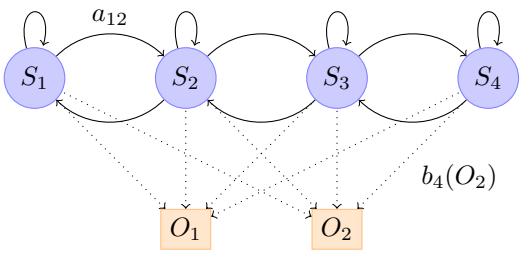

Figure 1: An HMM with 4 states which can emit 2 discrete symbols O_1 or O_2. a_{ij} is the probability to transition from state S_i to state S_j. $b_j(O_k)$ is the probability to emit symbol O_k in state S_j. In this particular HMM, states can only reach themselves or the adjacent state.

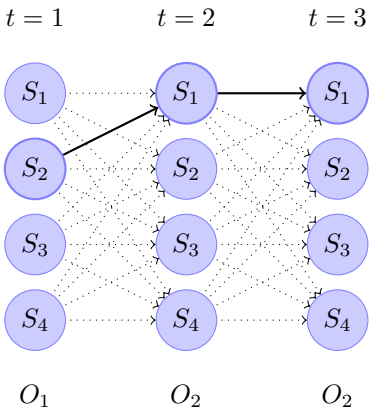

Figure 2: Trellis of the observation sequence O_1,O_2,O_2 for the above HMM. The thick arrows indicate the most probable transitions. As an example, the transition between state S_1 at time t=2 and state S_4 at time t=3 has probability $\alpha_2(1)a_{14}b_4(O_2)$, where $\alpha_t(i)$ is the probability to be in state S_i at time t.