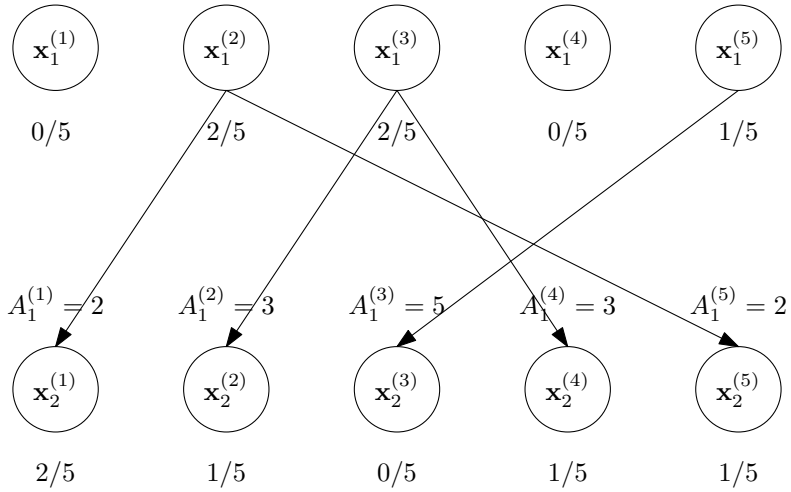


Particle filter

$$t = 3$$

Sample parents' indices of 3rd generation

$$A_2^{(k)} \sim \text{Cat}(W_2^{(1)}, \dots, W_2^{(5)})$$



$$A_2^{(1)} = 2$$

$$A_2^{(2)} = 4$$

$$A_2^{(3)} = 1$$

$$A_2^{(4)} = 5$$

$$A_2^{(5)} = 1$$