Comparative cost and preferred method

With k states at each node, a dense joint table has $k^3 - 1$ free probabilities. The factorized model has $(k-1) + 2k(k-1) = 2k^2 - k - 1$ free parameters. A single joint entry needs two multiplications after factor lookup. The storage reduction follows from the stated conditional independence and is already the standard graphical-model method.