

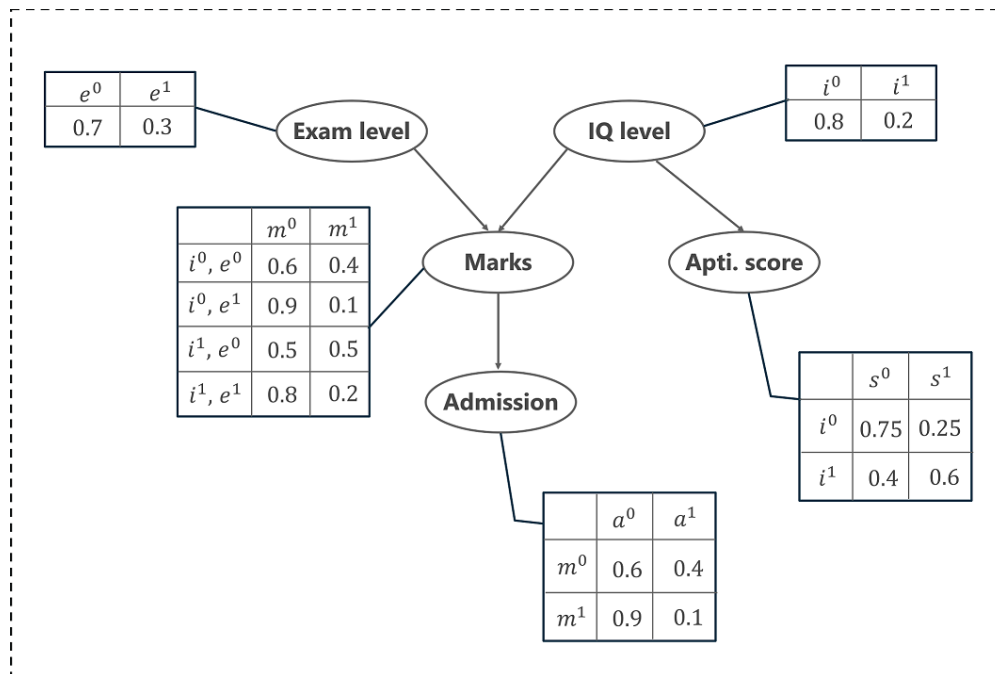
UCS1504 - Artificial Intelligence Lab

Department of CSE, SSN College of Engineering

8. Inference using Bayesian Network (BN) – Joint Probability Distribution

27.10.2022

The given Bayesian Network has 5 variables with the dependency between the variables as shown below:



1. The marks (m) of a student depends on: Exam level (e): This is a discrete variable that can take two values, (difficult, easy) and IQ of the student (i): A discrete variable that can take two values (high, low)
2. The marks will intern predict whether or not he/she will get admitted (a) to a university.
3. The IQ will also predict the aptitude score (s) of the student.

Write functions for the following using Python:

1. Construct the given DAG representation using appropriate libraries.
2. Read & Print the conditional probability values in Table Format for each variable.
3. Calculate the Joint Probability Distribution of the BN using 5 variables.

Observation: Write the formula for Joint Probability Distribution and explain each parameter.

Justify the answer with the advantage of BN.