

For $i = 1, \dots, N$

Compute \mathbf{v}_i as a function of $\text{Pa}(\mathbf{v}_i)$

$$\overline{\mathbf{v}}_N = 1$$

For $i = N - 1, \dots, 1$

$$\overline{\mathbf{v}}_i = \sum_{j \in \text{Ch}(\mathbf{v}_i)} \frac{\partial \mathbf{v}_j}{\partial \mathbf{v}_i}{}^\top \overline{\mathbf{v}}_j$$