



Why

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Definition

Let G be a directed graph on $\{1, \dots, n\}$. A *parametric distribution graph family* (or *parametric distribution network family*, *parameteric conditional distribution network family*) is a family of conditional distribution networks $\{G, \{g_i^{(\theta)}\}_{i=1}^n\}_{\theta \in \Theta}$. We call the index set Θ the *parameter set*. G does not depend on the parameters.

In the case that $\text{pa}_i = \emptyset$ in G , $\{g_i^{(\theta)}\}_{\theta}$ is a parametric distribution family on A_i and in the case that $\text{pa}_i \neq \emptyset$, $\{g_i^{(\theta)}\}_{\theta}$ is a parametric conditional distribution family on A_i from $\prod_{j \in \text{pa}_i} A_j$ (for both these terms, see Parameterized Distributions).

A parametric distribution network family is *functionally parameterizable* if each of the conditionals is functionally parameterizable (again, see Parameterized Distributions).

¹Future editions will include.

