

MAXIMUM LIKELIHOOD DISTRIBUTION GRAPHS

Why

How to select distribution graphs.¹

Definition

Let (G,A) be a typed graph on $\{1,\ldots,n\}$. Let $S \subset \{1,\ldots,n\}$. Let x^1,\ldots,x^n be a dataset in $A_S = \prod_{j\in S} A_j$ (see Function Graphs). The observation likelihood for this dataset is the observation distribution likelihood of the dataset $\prod_{i=1}^n p_S(x^i)$.

A maximum likelihood distribution graph is one that maximizes the observation likelihood. The maximum likelihood distribution graph with respect to a parametric distribution family is the member of the family that maximizes the observation likelihood.

 $^{^1\}mathrm{Future}$ editions will modify.

