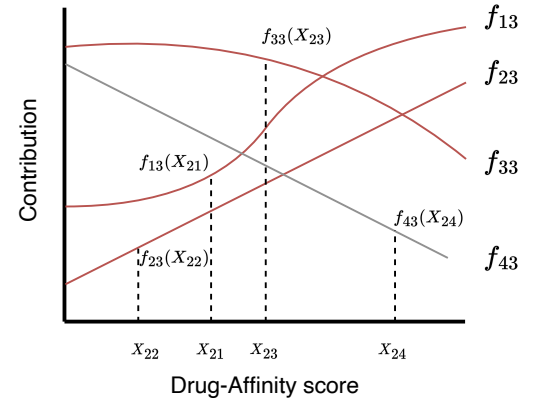
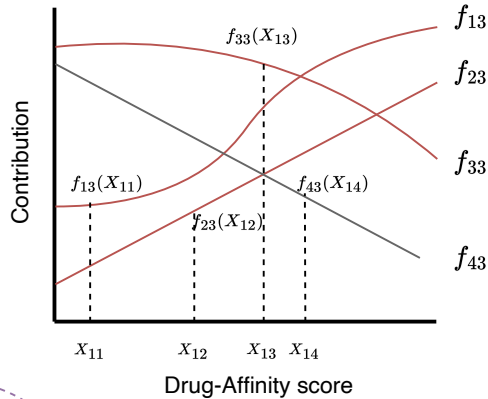


A

Drug-Affinity Matrix

of drugs $\begin{Bmatrix} X_{11} & X_{12} & X_{13} & X_{14} \\ X_{21} & X_{22} & X_{23} & X_{24} \end{Bmatrix}$

of proteins



Drug-Sensitivity Matrix

of drugs $\begin{Bmatrix} Y_{11} & Y_{12} & Y_{13} \\ Y_{21} & Y_{22} & Y_{23} \end{Bmatrix}$

of samples

$$Y_{13} = \alpha_3 + \sum_{p=1}^4 z_p f_{p3}(X_{1p}) + \epsilon_{13}$$

$$Y_{23} = \alpha_3 + \sum_{p=1}^4 z_p f_{p3}(X_{2p}) + \epsilon_{23}$$

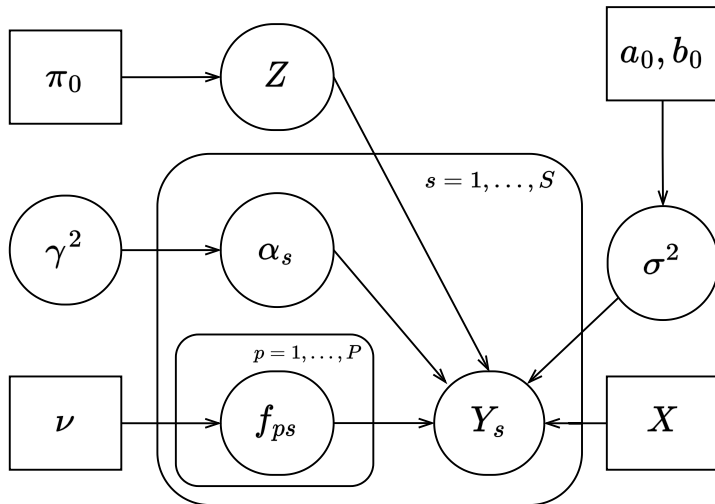
B

C

Table of variables		
Name	Distribution	Description
a_0, b_0	Constant	Hyperparameters of σ^2
ν	Constant	Hyperparameter of Gaussian Process
π_0	Constant	Hyperparameter of Z
X	Constant	Processed drug-protein affinity matrix
σ^2	Inverse-Gamma	Scale parameter controlling the variance of the noises
γ^2	Half-Normal	Scale parameter of the intercepts α_s
α_s	Normal	Intercept parameter of the s th sample
f_{ps}	Gaussian Process	A function measuring the contribution of drug sensitivity scores of the p th protein to the s th sample
Z	Bernoulli	Indicator variables controlling the inclusion of proteins
Y_s	Multivariate Normal	The s th column of the processed drug sensitivity matrix