



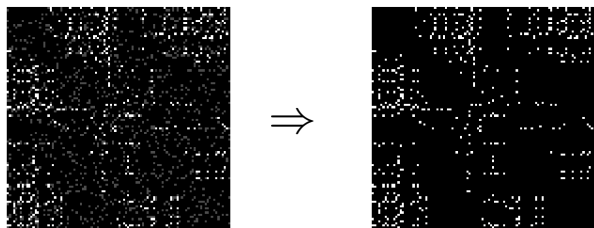
# Nonparametric Latent Feature Models for Link Prediction

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Our goal: A generative model for latent feature based link prediction

Link prediction:

Predict unobserved relationships based on observed ones.



Previous ML generative models:

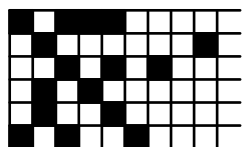
Infer latent classes that explain the relationships (e.g. IRM, MMSB).



Our approach:

Bayesian Nonparametrics

Statistical analysis of networks

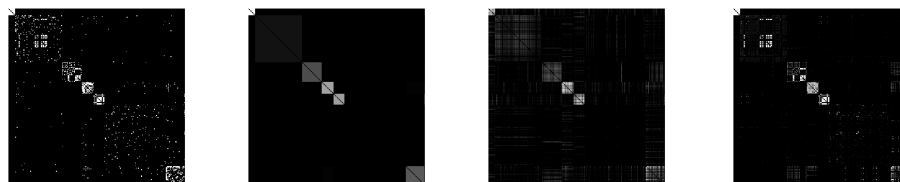


$$y_{ij} \sim \sigma(\beta^T X_{ij} + \beta_p^T X_{p,i} + \beta_c^T X_{c,j} + \gamma_{ij})$$

Our model!

Results:

Greater expressiveness improves performance over previous generative models.



True

IRM

MMSB

Ours