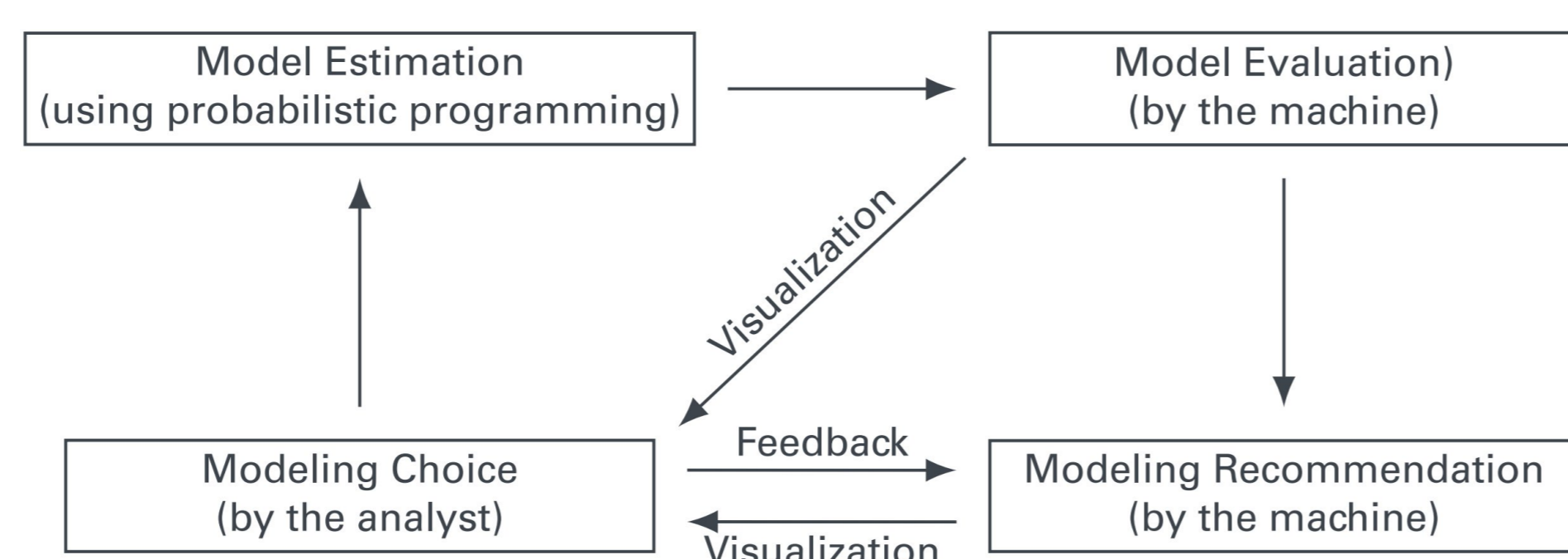
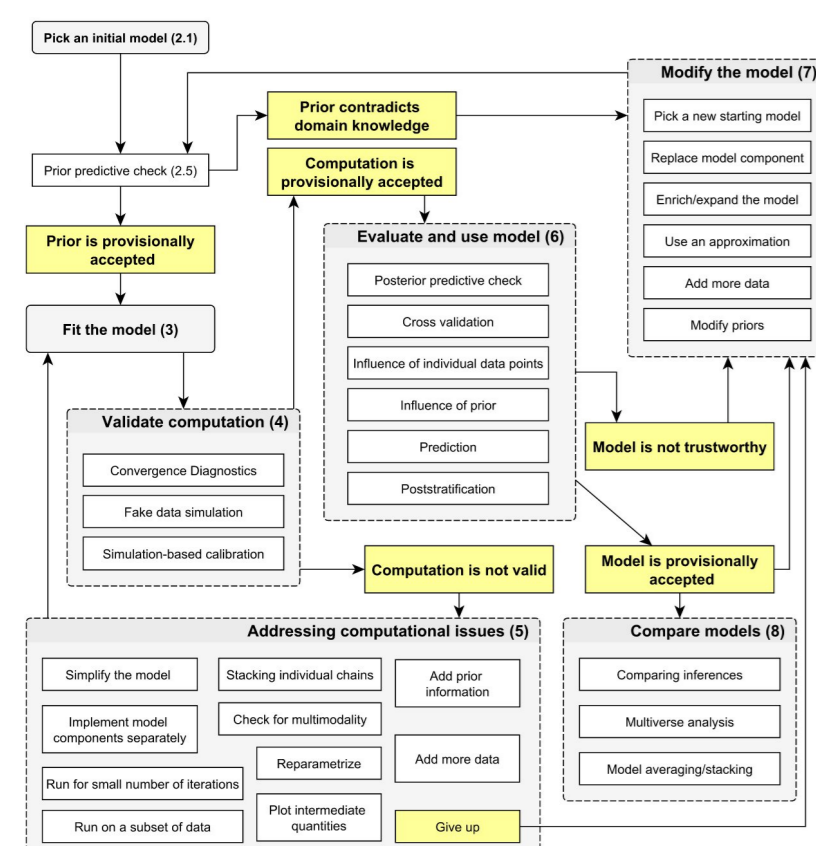


Maximilian Scholz

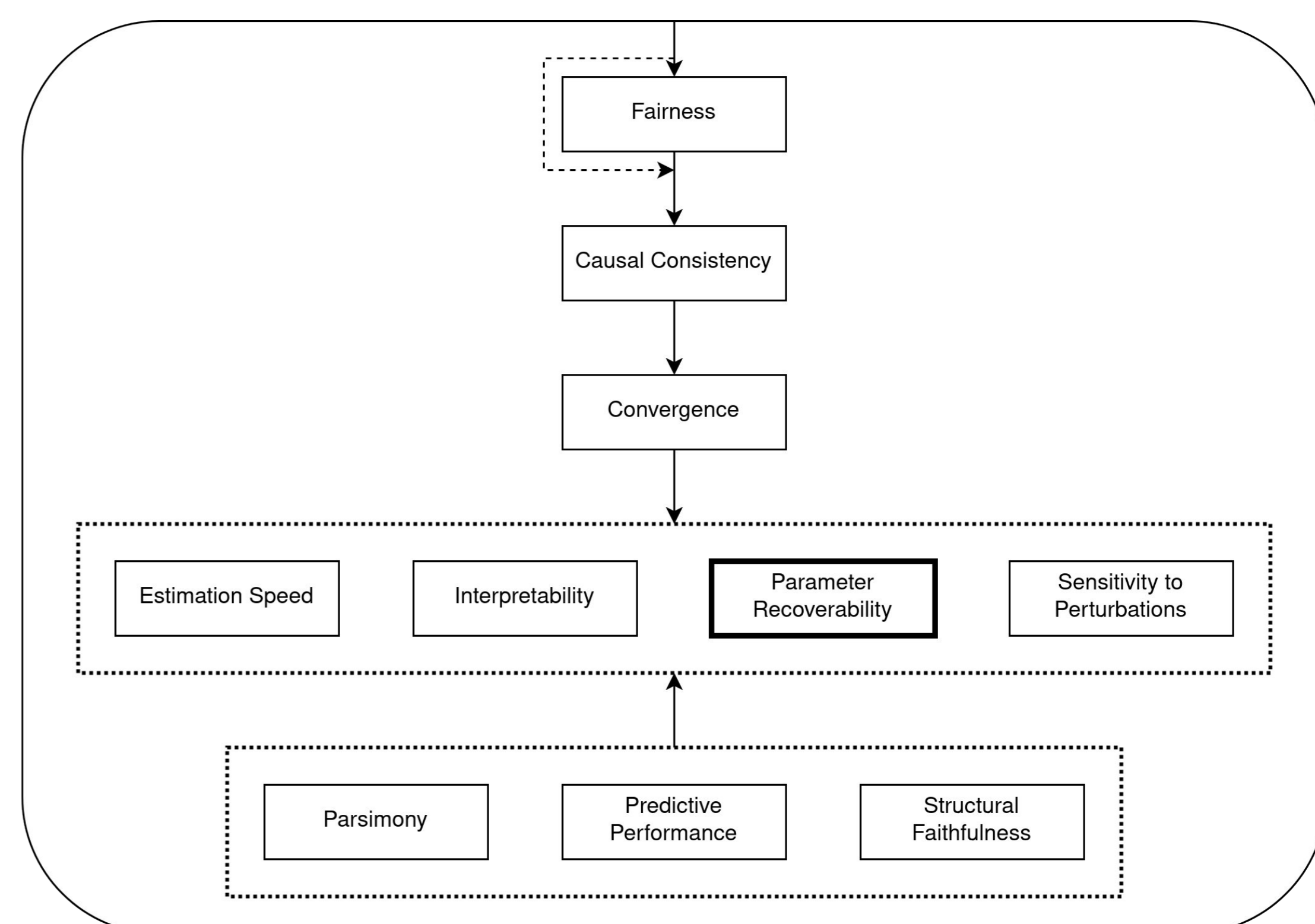
maximilian.scholz@simtech.uni-stuttgart.de

Machine Learning for Bayesian Model Building

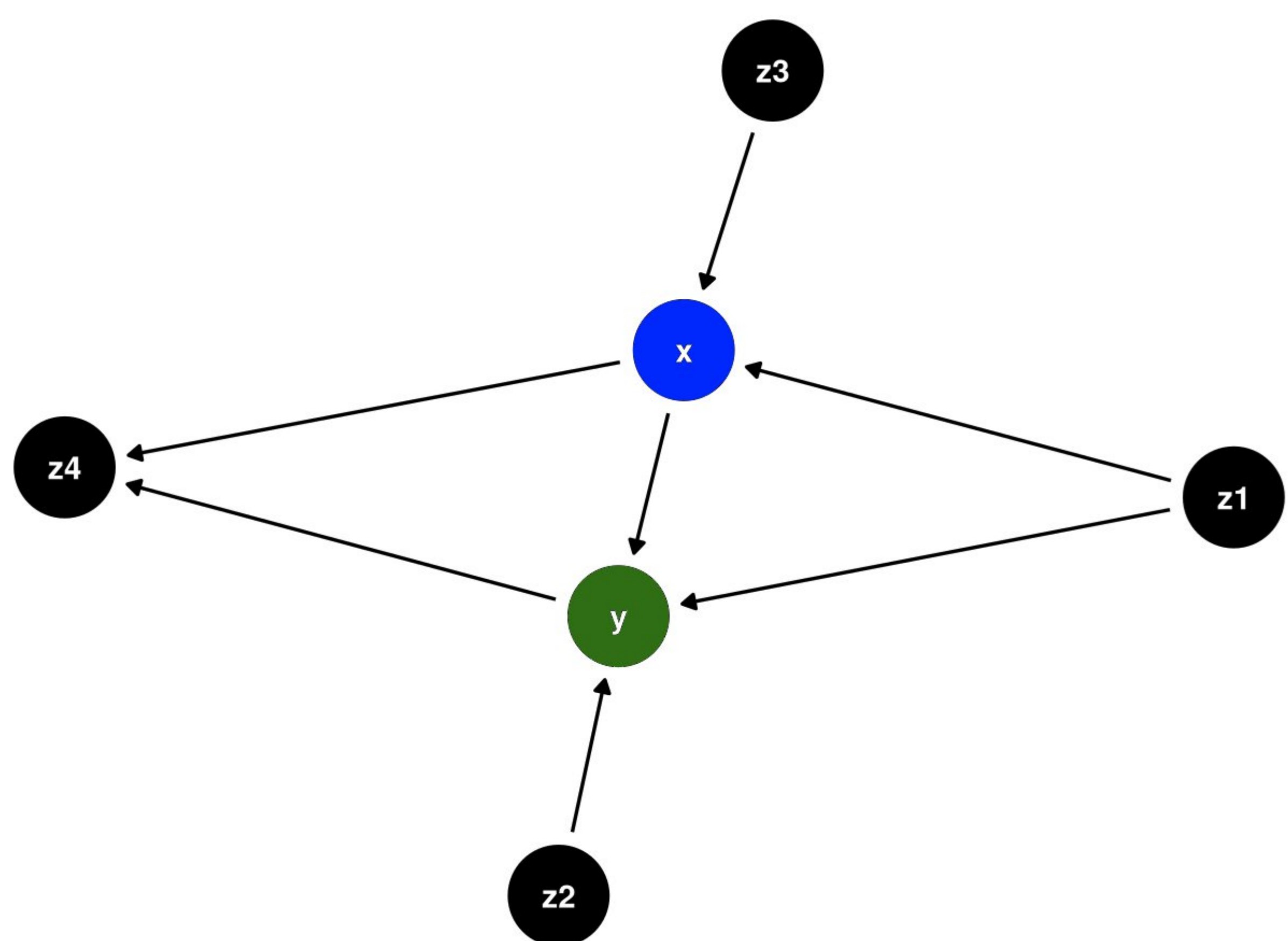
Bayesian Workflow



Model Utility Hierarchy



Modeling Latent Utilities with Observable Utilities through Simulation



- $y \sim x + z1 + z2$ (True)
- $y \sim x + z2$ (Reduced Precision)
- $y \sim x + z1$ (Reduced Precision)
- $y \sim x + z1 + z2 + z3$ (Biased)
- $y \sim x + z1 + z2 + z4$ (Biased)

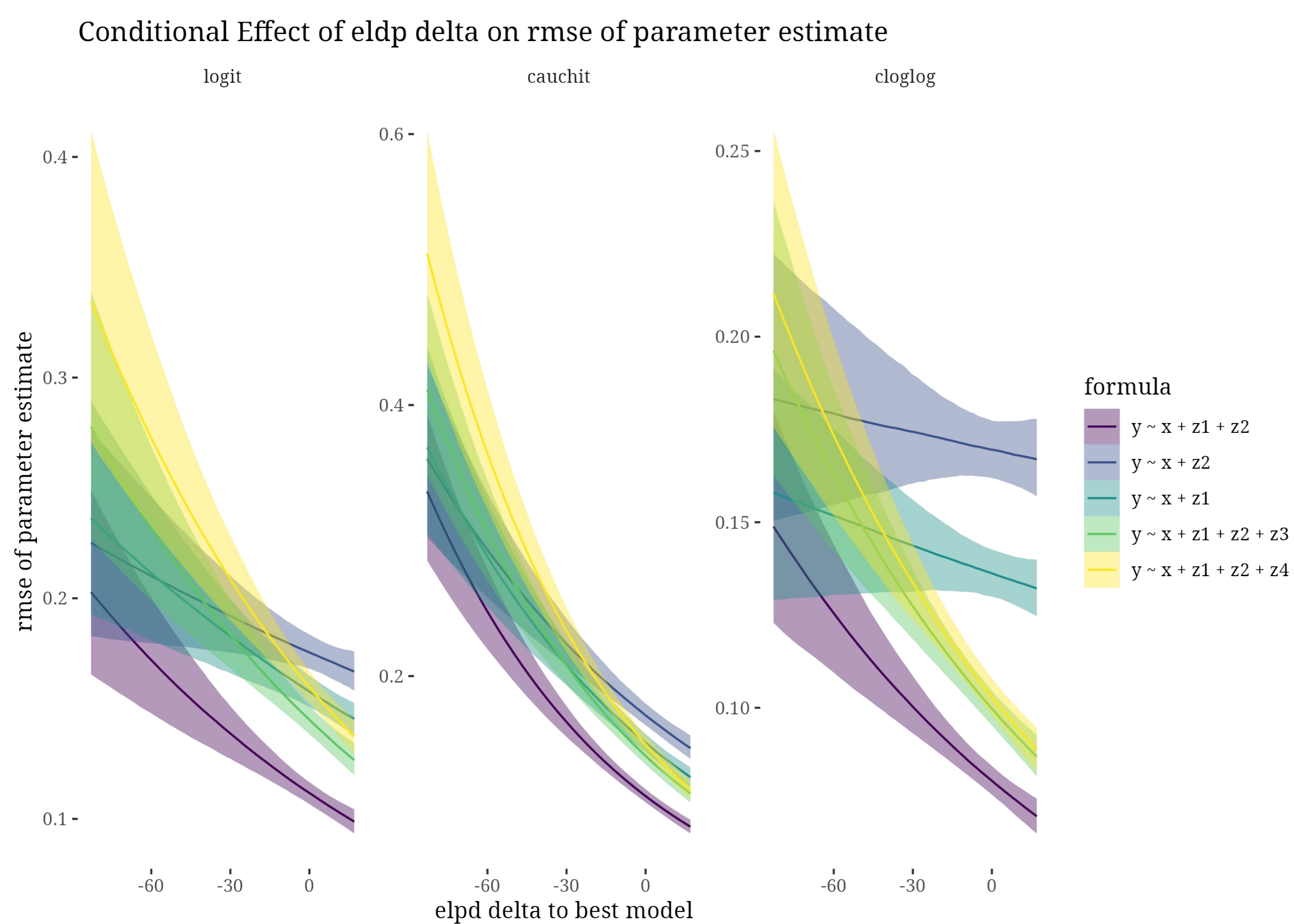
Unit Interval Data

Link Functions: Logit, Cauchit, Cloglog
Likelihoods: Beta, Kumaraswamy, Link-Normal, Simplex, Gaussian

Continuous Positive Data

Link Functions: Log, Softplus
Likelihoods: Gamma, Weibull, Beta-Prime, Link-Normal, Frechet, Gompertz, Inverse Gaussian, Gaussian

Unit Interval Results



Continuous Positive Results

