

Paper

Outline

- Introduction to problem and history
 - Bayesian paradigm
 - * Interested in finding the posterior distribution of some parameter(s), given the prior distribution and the sample
 - * Bayes rule
 - * Bayesian Posterior calculation
 - * History of bayesian computation
 - MCMC
 - Common terms that will be used in rest of paper
 - Provide basic code example
- General Bayesian computational settings
 - Chains
 - * Greta
 - Iterations
 - Warmup
 - * STAN/Bugs uses warmup as a part of iterations, Jags/greta/Nimble have it seperate.
 - Thinning
 - initial value specification
- Each sampler
 - BUGS -
 - * WINE
 - * Debugging
 - Jags
 - Nimble
 - * Crashes
 - STAN
 - * RDS file
 - greta
- Common coding techniques for each language
 - Model specification
 - * Truncated normal
 - * matrix multiplication
 - * Flat priors
 - * parameter order
 - Binomial Stan has (n,p), rest have (p,n)
 - * Equations inside distribution parameters
 - Data specification
 - * Nimble constants
 - * Nimble initial values
 - * initial values for each
- Benchmarking
 - Run time
 - Memory allocation
 - Computational accuracy

- Benchmarking files
- Folder design
 - General model type
 - * Simple conjugate models
 - * Regression models
 - * Time Series models
 - * Survival models
 - * 8 Schools
 - Specific model type
 - Scripts for each method
 - Benchmarking
- Here package
- Models Used