Outline

Bayesian (Generalised) Linear Models

1. Introduction
2. Methods

- bayesian linear regression
  - intuitive approach to bayesian linear models: regularization
    - why regularization?
    - bayesian linear regression with a gaussian prior is equal to ridge regularization
    - bayesian linear regression with laplace prior is equal to lasso regularization
  - inference in bayesian LMs
    - posterior predictive distribution in closed form
  - bayesian linear regression with other priors -> further use cases of bayesian linear models
  - choice of priors, conjugate priors?
  - estimation: Laplace Approximation and MCMC
- bayesian generalised linear regression
  - logistic regression
  - probit
  - general?
- hierarchical GLMs
  - GLMMs

3. Simulation Study
4. Conclusion + Outlook