

# Binary probit regression with I-priors

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# Outline

## ① Introduction

I-priors

Roadmap

## ② Probit models with I-priors

## ③ Variational inference

Introduction

A simple example

## ④ Illustration in R

## ⑤ Applications

## ⑥ Summary

# Priors on regression functions

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W. Bergsma (2017). “Regression with I-priors”. *Manuscript in preparation*

# The I-prior

# RKHS sample paths

# Relation to Gaussian process regression

# Roadmap

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# Introduction

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C. M. Bishop (2006). *Pattern Recognition and Machine Learning*. Springer

# Decomposition of the log marginal

# Comparison

# Factorised distributions (Mean field theory)

# Variational Bayes EM

# Estimation of Gaussian mean and variance

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End

Thank you!

# References I

- Bergsma, W. (2017). "Regression with I-priors". *Manuscript in preparation*.
- Bishop, C. M. (2006). *Pattern Recognition and Machine Learning*. Springer.