BACKEND AGNOSTIC EXPLORATORY ANALYSIS OF BAYESIAN MODELS

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INTRODUCTION

Probabilistic programming and frameworks for it have grown significantly in recent years and become an important field on its own in both academia and industry. Robust modeling workflows require a wide set of tools beyond inference itself.

Diagnose input data, probabilistic model, inference, diagnostics, model comparison, and model criticism. ArviZ aims to provide a comprehensive set of statistical and visualization tools to ease such tasks.

DIAGNOSTICS

ArviZ strives to set sensible defaults and to implement the latest published algorithms.

Model Comparison

ArviZ has PSIS-LOO (and reloo), WAIC and also supports them for hierarchical models.

Model Criticism

There are visualizations in ArviZ for prior/posterior predictive checks, LOO-PIT, test values/Bayesian p-values for both continuous and discrete data.

POSTERIOR EXPLORATION

ArviZ provides a wide range of visualizations to explore the models and inference results. See also our Example Gallery.

REFERENCES


CONTACT

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Code: github.com/OriolAbril/arviz-probprog-2020

INFERENCE DATA CREATION

PyMC3 PyStan Soss