



ArviZ Dashboard

Dashboard-assisted exploratory analysis of Bayesian models

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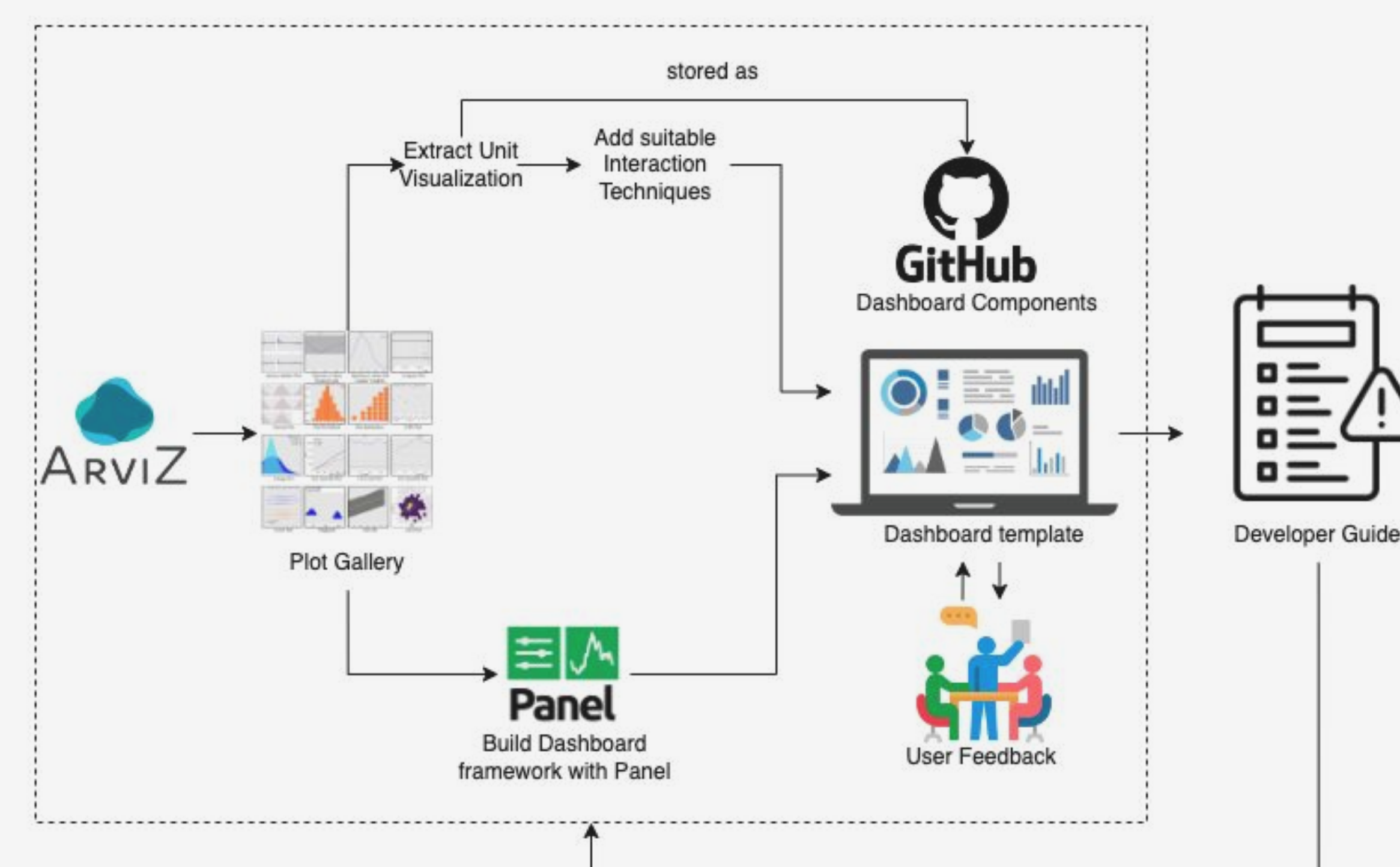
Background

Exploratory analysis of Bayesian models is an **iterative process**, where subsequent steps depend on the results of previous ones. For example, if a diagnostics points out our samples are not reliable, it does not make sense to keep analyzing them and instead we need to go back and investigate the underlying reasons for the problem and eventually fix it before moving on. This iterative approach allows researchers to systematically

- uncover patterns
- address potential issues
- gain a more accurate understanding of their Bayesian models

From Static to Interactive

ArviZ provides the **static plots** that provide the backbone of visualization that Bayesian practitioners need. However, there is a gap between these plots and the side-by-side views and interactivity that end-users want. This functionality does not naturally fit in ArviZ, so we developed a new set of tools leveraging dashboards to **enhance interactivity** and **integration of related plots**.



Benefits of Dashboards



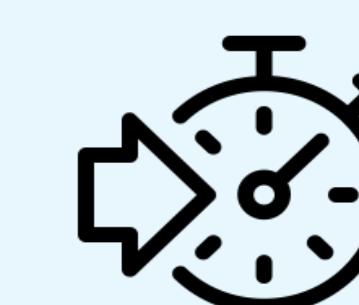
Enhanced user experience

The introduction of interactive dashboards would greatly enhance the user experience by providing a more dynamic and intuitive interface for exploring Bayesian models.



Improved data exploration

Dashboards allow users to simultaneously view multiple visualizations and explore relationships between different aspects of the model and data.



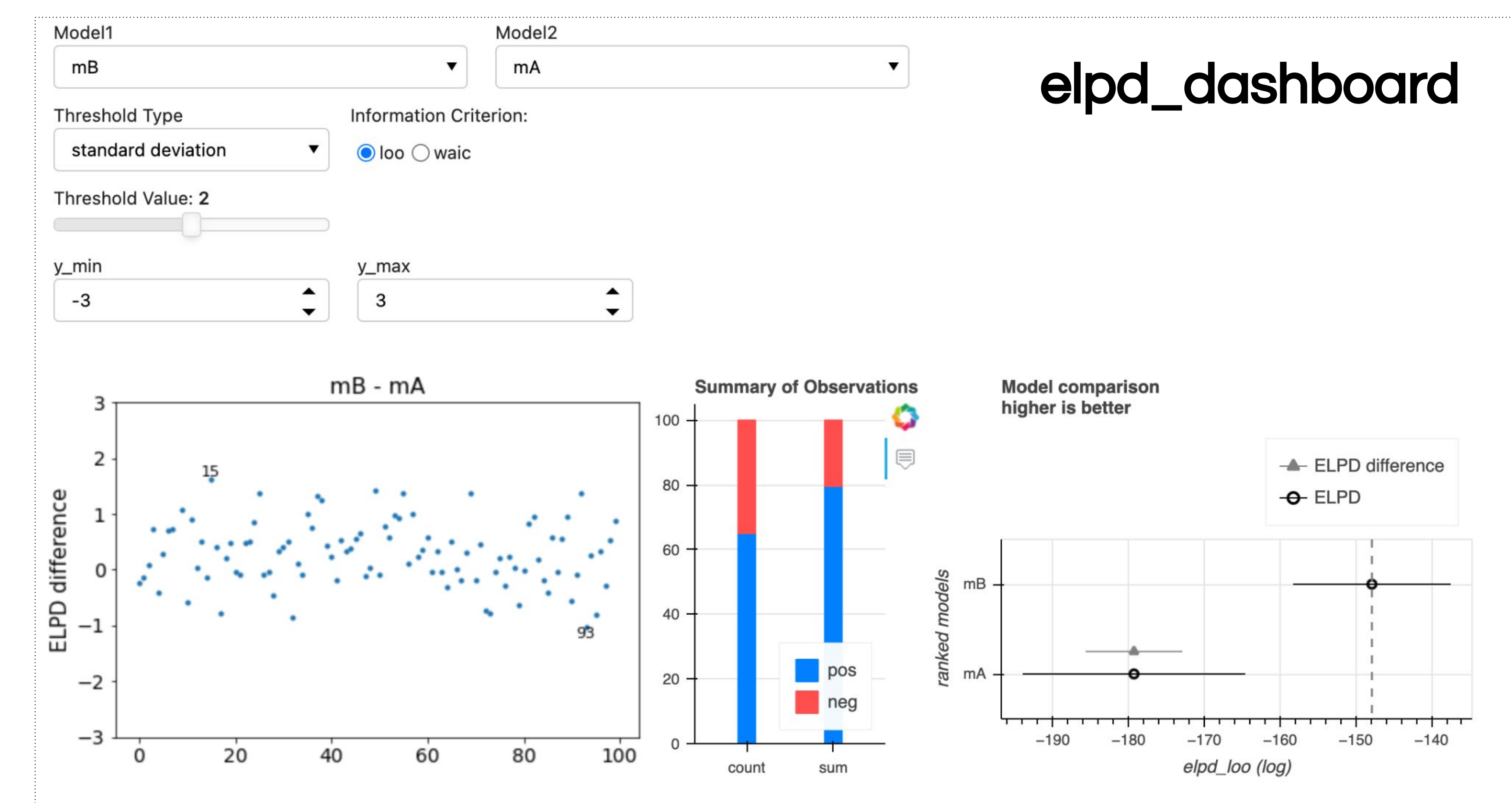
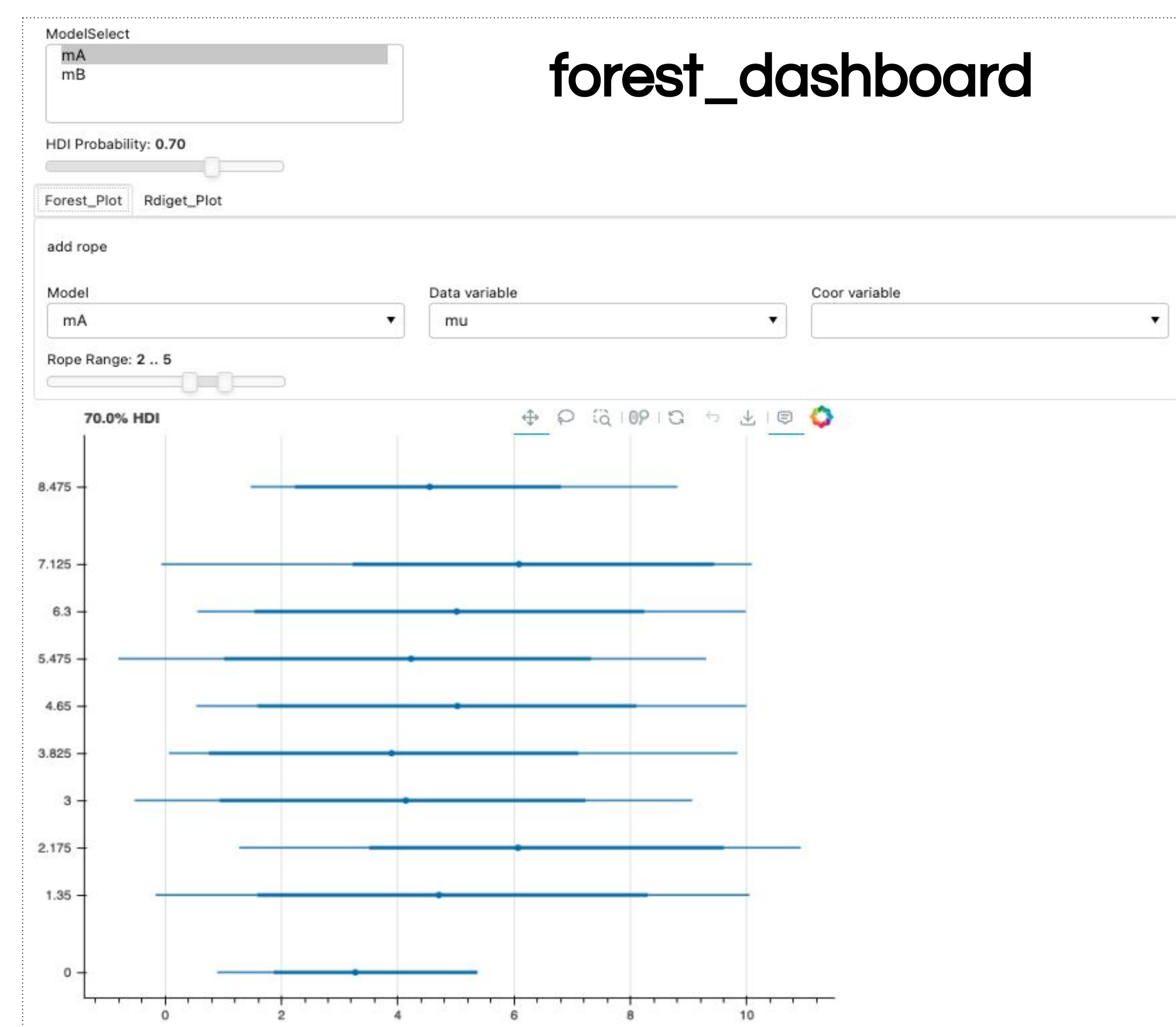
Faster way to iterate models

By integrating related functionality into a unified dashboard framework, ArviZ would provide a seamless workflow for Bayesian model analysis.

Community Feedback

Our commitment to **user-centric** development prompted us to launch a questionnaire on major social media platforms. We sought to grasp user preferences concerning dashboards and the feedback affirmed our direction:

- There was a strong inclination towards dashboards that could provide an overview of the results, with the added capability of **interactively** modifying the displayed content.
- Users expressed a keen interest in visuals that could aid in **exploring joint distributions**, helping diagnose potential issues or failures in a model.
- Clarity was a recurring theme, with users desiring **intuitive layouts** that made it easy to discern the types of plots available and the customization options they came with.



Acknowledgements

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