

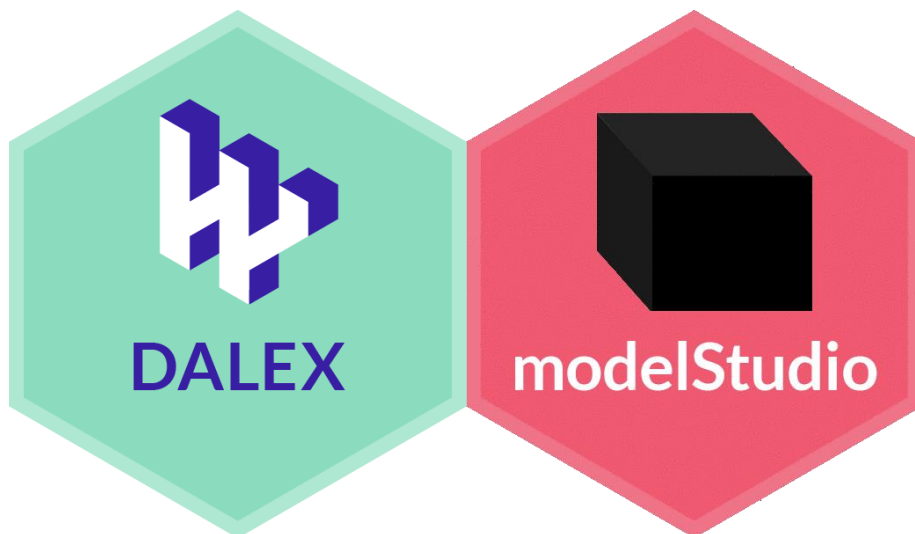
# Open the Machine Learning Black-Box with modelStudio & Arena

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```
hbaniecki:~$ whoami
```

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Researcher and data science student at Warsaw University of Technology  
Developing tools for explainable machine learning in R & Python
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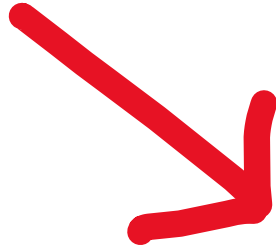


# Arena



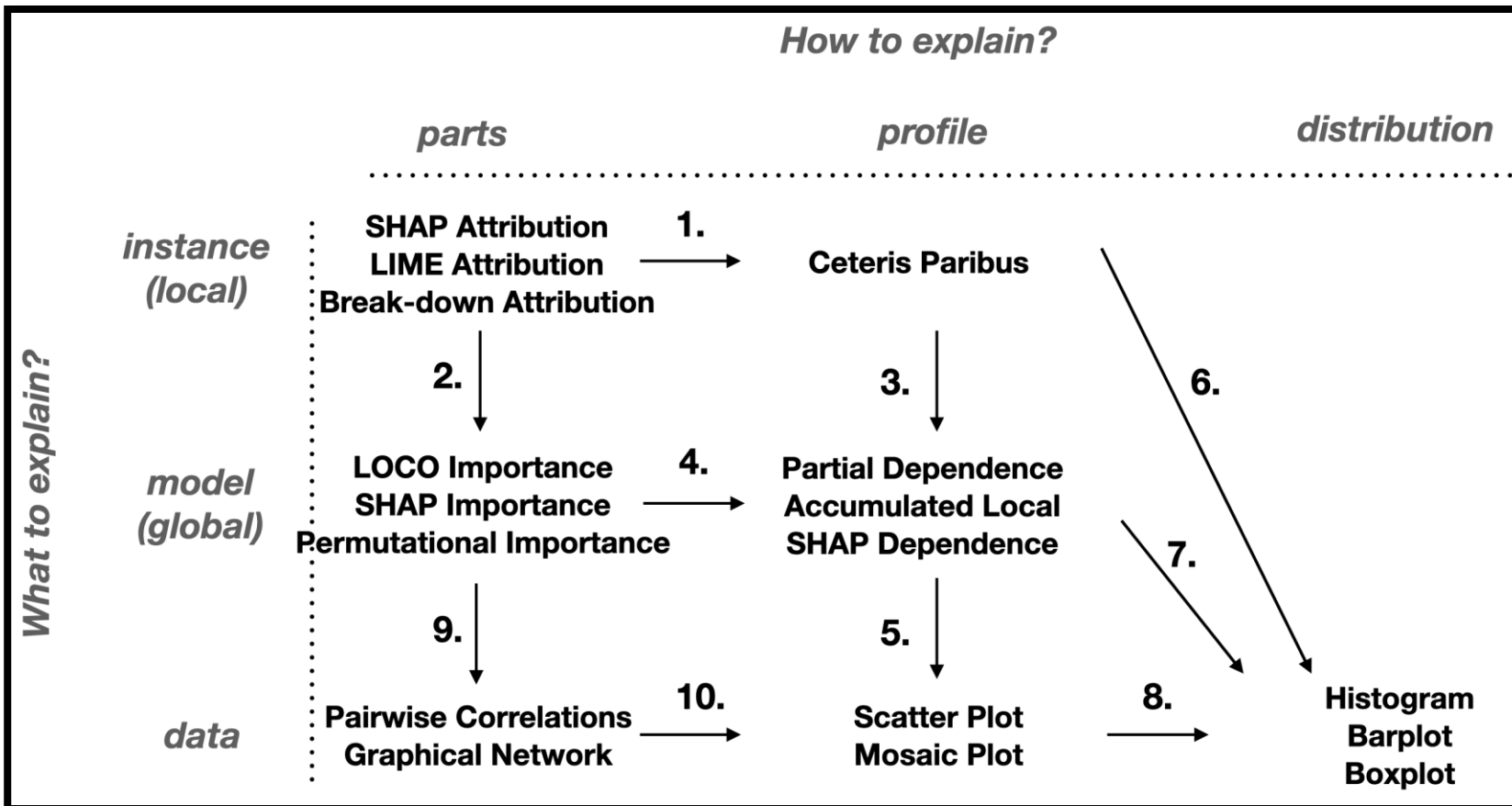
# Challenges in explanatory model analysis

- ❖ Various stakeholders
- ❖ High entry threshold
- ❖ Reproducibility
- ❖ A lot of coding...

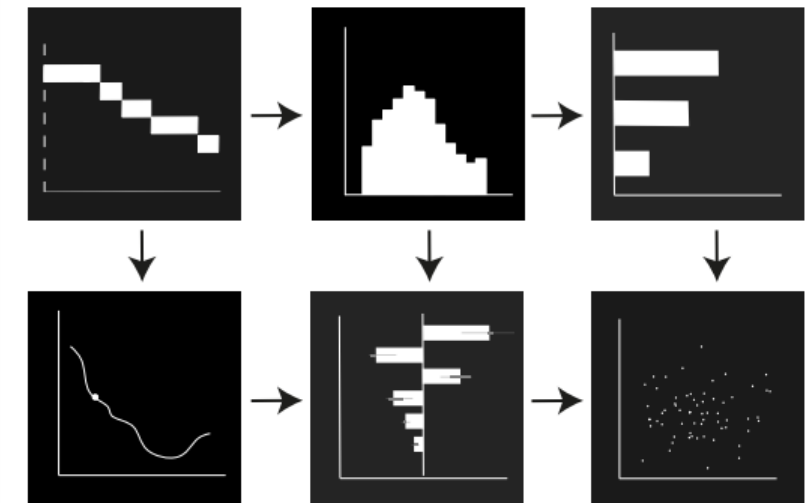


- ✓ Automation
- ✓ Versioning
- ✓ Interactivity
- ✓ Customizability

# Interactive explanatory model analysis

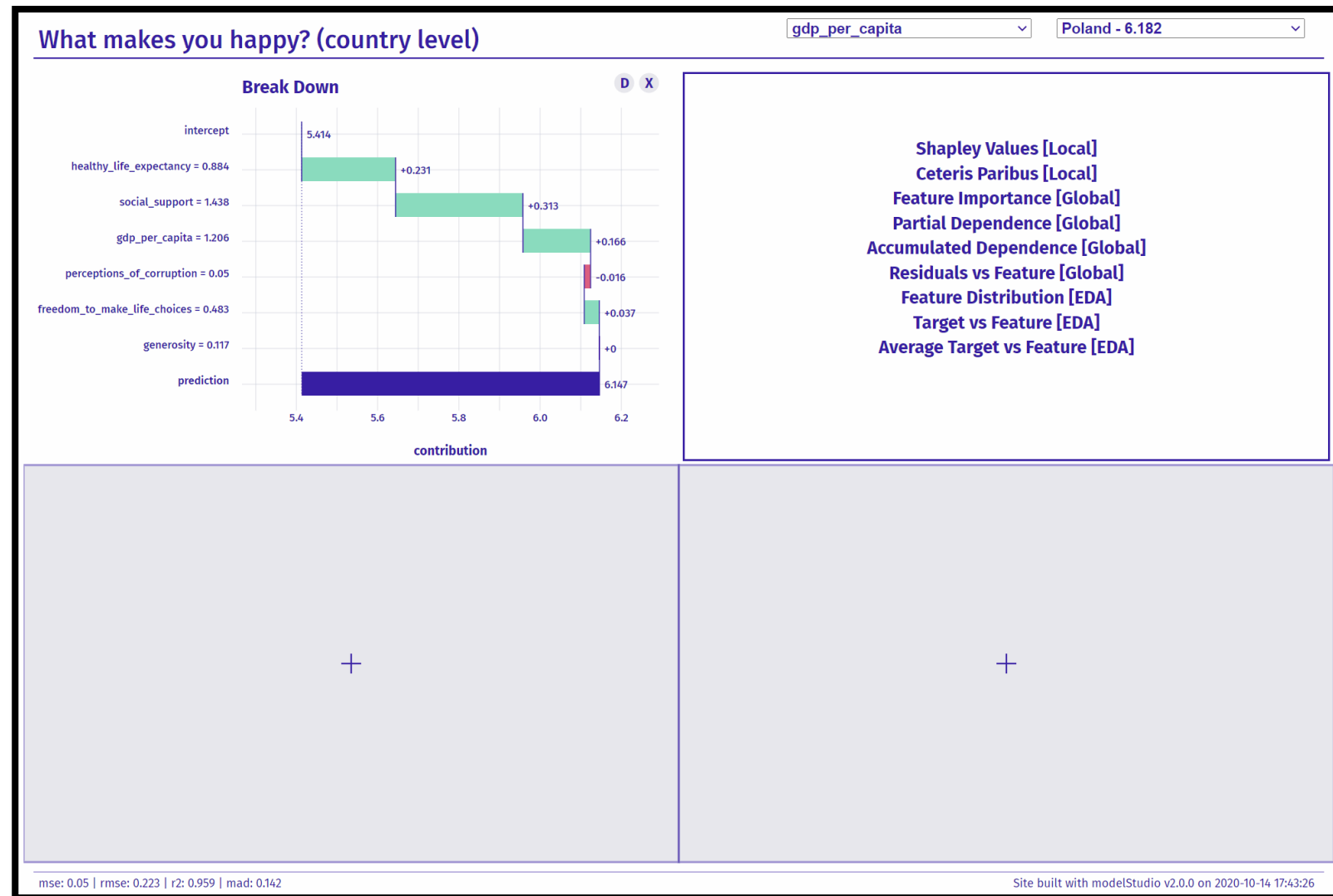


II generation explanations  
(interactive explanatory  
model analysis)



# modelStudio

- creates a dashboard for model analysis
- automated calculations
- customizable interface
- save & share your analysis



# convenient

```
# 0. package
library("DALEX")
library("modelStudio")

# 1. data
X <- ...
y <- ...

# 2. model
model <- ...

# 3. explainer
explainer <- DALEX::explain(model, X, y)

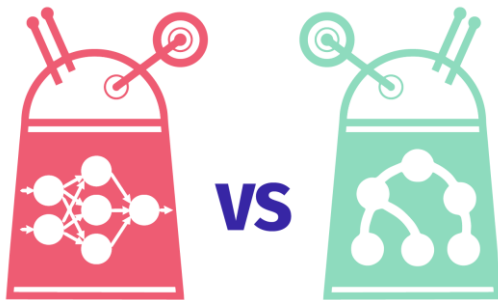
# 4. dashboard
ms <- modelStudio::modelStudio(explainer)
ms
```

## DEMO:

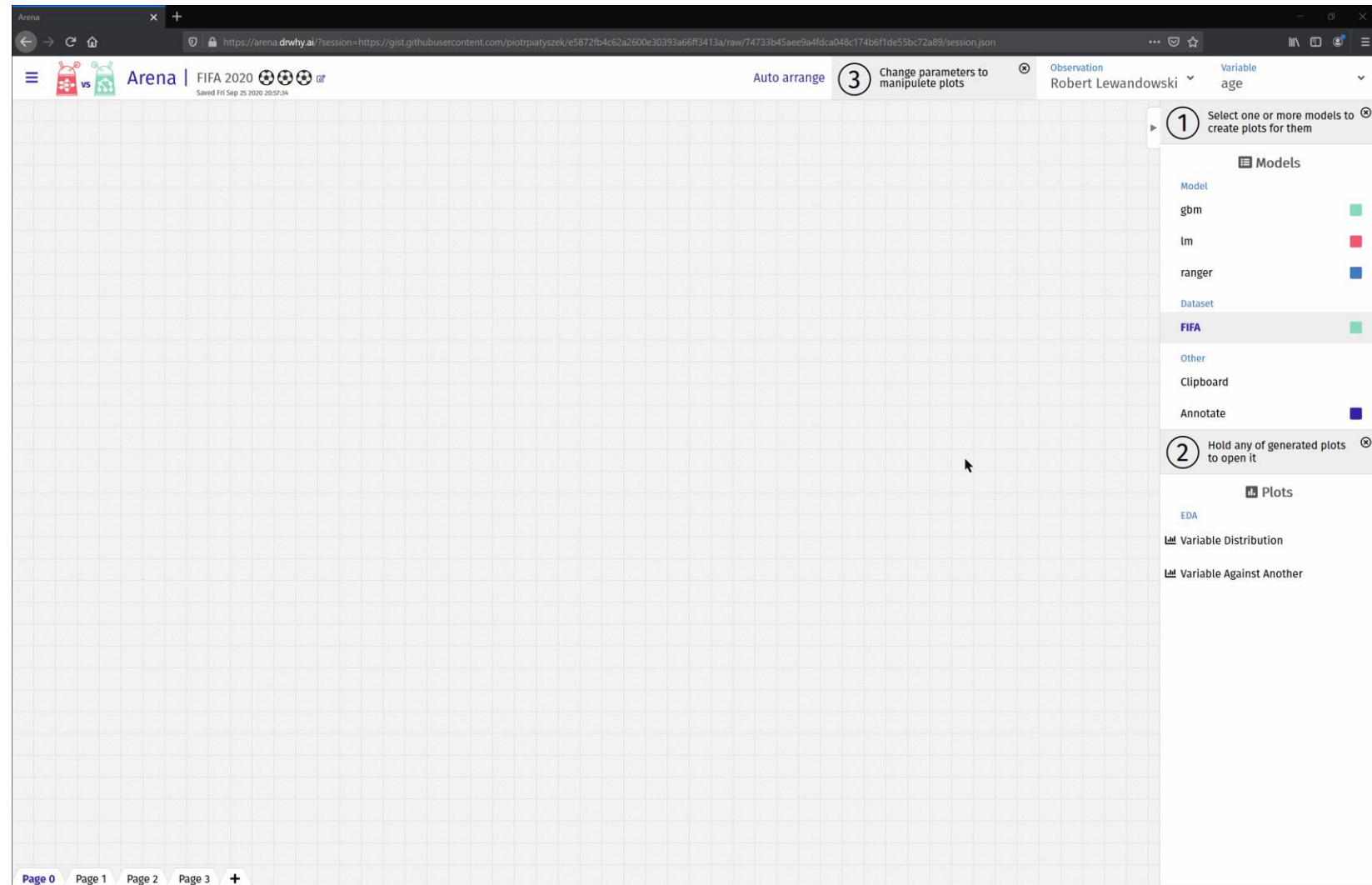
<https://github.com/hbaniecki/user-21>

# Arena

- compare models!
- on multiple datasets!!
- fairness plots
- more pages & cache
- still easy to create...



R & Python



```

# 0. package
library("DALEX")
library("arenar")

# 1. data
...
observations <- ...

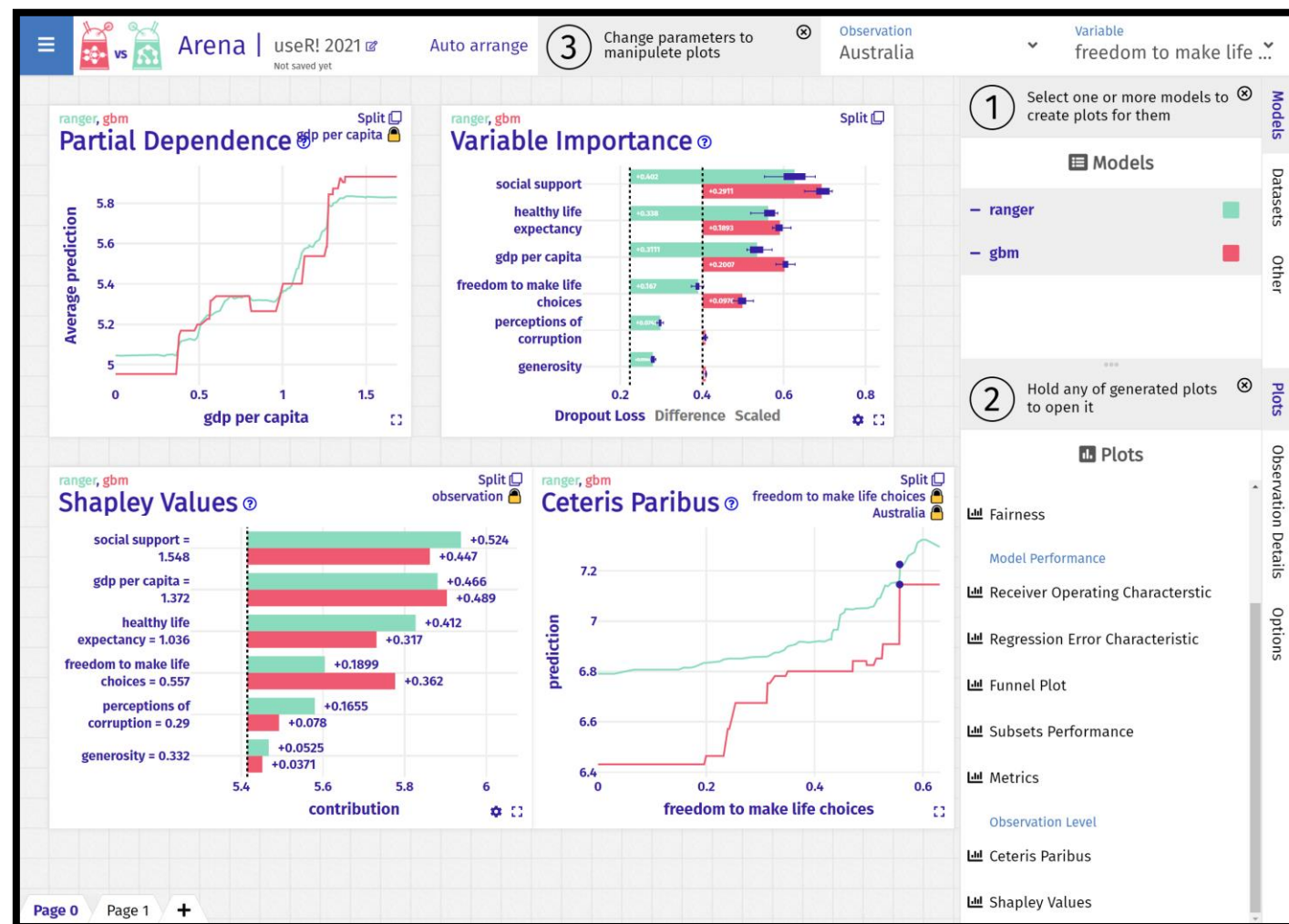
# 2. models
model_1 <- ...
model_2 <- ...

# 3. explainers
explainer_1 <- DALEX::explain(model_1, X, y)
explainer_2 <- ...

# 4. dashboard
arena <- create_arena(live=TRUE) %>%
  push_model(explainer_1) %>%
  push_model(explainer_2) %>%
  push_observations(observations)

run_server(arena)

```





# Feedback appreciated !

Contact **[hbaniecki.com](https://hbaniecki.com)**

modelStudio **[github.com/ModelOriented/modelStudio](https://github.com/ModelOriented/modelStudio)**

Arena **[arena.drwhy.ai](https://arena.drwhy.ai)**