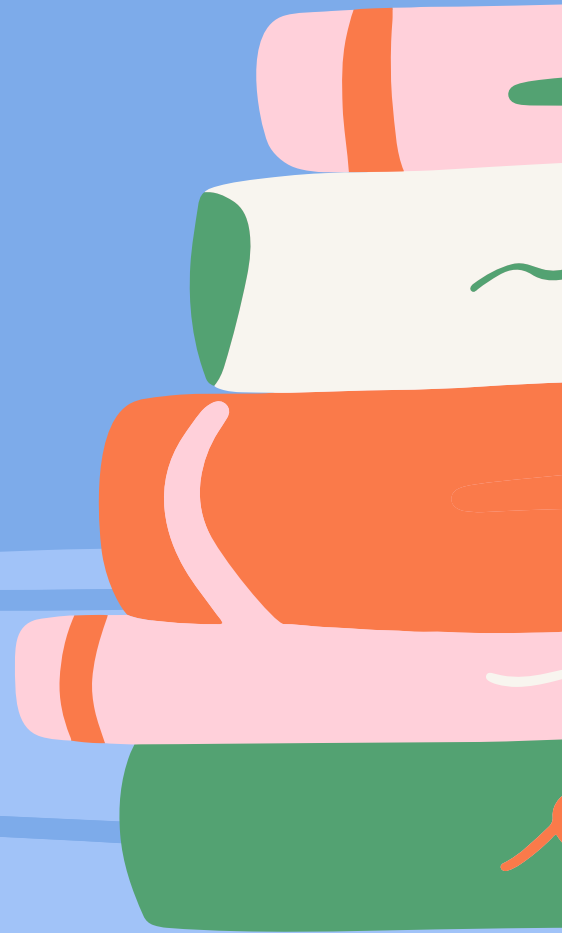
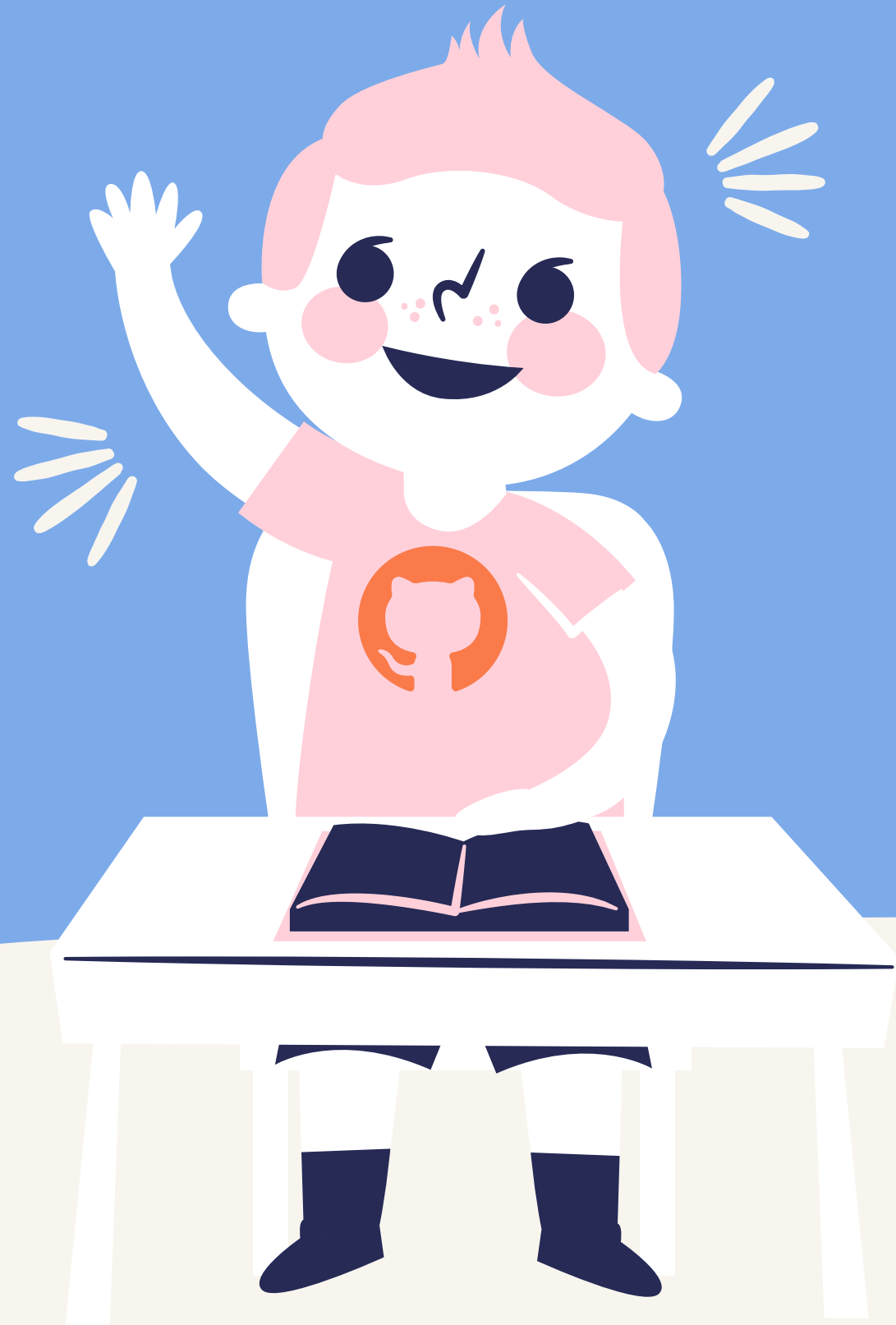


FEDOT FRAMEWORK

**Want to implement
a custom operation
(model) in FEDOT?**

Follow me ;)





FIRST, LET'S REMEMBER

All the contributions to the master branch can be made only via pull request

Therefore,
Create a new branch from the master branch and start working!

FEDOT user abstractions

PIPELINE

This is a set of several models or preprocessing methods that are contained in a single structure

Pipeline consists of nodes (one or more)

NODE

A container in which the operation is placed. A single node can contain only one operation

Node contains operation

OPERATION

A machine learning model or preprocessing operation or statistical models

The model you call e.g. from sklearn

FEDOT developer abstractions

FEDOT consists of several layers

Pipeline

Pipeline class



Node

PrimaryNode and SecondaryNode classes



Operation

Model and Operation classes



EvaluationStrategy

There are many of them. This allows you to use models from different libraries. Also, all strategies are divided into types of tasks to be solved, such as classification and regression



Implementation

"Lowest Asbtraction". These are our models and preprocessing realisations. If you want to implement your own, you're right here.



What I can use as a template?

Answer: To implement a custom "Implementation", use an abstract class `DataOperationImplementation` for data preprocessing and a `ModelImplementation` class to create your own models





Step 0

Implementing your custom model or data
processing operation



What to do when the custom model has been implemented

That's great, you've done so much already!

Step 1

Choose an appropriate strategy to which your operation should correspond to

It could be, for example:

CustomClassificationStrategy

CustomClassificationPreprocessingStrategy

CustomRegressionPreprocessingStrategy

CustomRegressionStrategy

CustomTsForecastingStrategy

CustomTsTransformingStrategy



Step 2

The operation must be included in the repository

You need to think of a short name for the operation and put it into a json file with the repository



DON'T FORGET



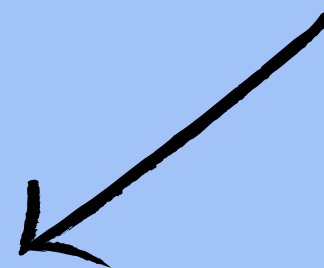
If you want your operation to tune well,
don't forget to take care of the
hyperparameters

Step 3

Write the default hyperparameters in the
json file

Step 4

Enter hyperparameter intervals in the
`get_operation_parameter_range` function
This is necessary so that the tuner can tune
your operation



CONGRATULATIONS!

Your custom operation can now be used in FEDOT

Step 5

Don't forget to write tests for the new
functionality!



If you have any questions, feel free to contact us

This presentation was prepared by Natural Systems Simulation Team