PFA Model Prediction

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The PFA transformation step allows for advanced data science models stored in a PFA file to be imported into Yellowfin, and be applied on data through the Data Transformation module.

> ✅ It would be ideal to get a better understanding of the data transformation module before continuing with this guide.

Prerequisites

There is no need to set up a system for this step. However, the main requirements of this step are:

- A data science model stored in a PFA format. The supported file extensions for this file are **JSON** and **YAML**.
- The PFA plug-in. (This can be downloaded from Yellowfin's Marketplace.)
- Data that you wish the model to run on. This will be imported through an input step.

General workflow

Here is a quick overview of the process. This guide will cover most of these steps in detail.

1. Install the PFA plug-in in your instance of Yellowfin. (You can download this from the Marketplace.) Learn how to install plug-ins here.
2. Use Yellowfin's data transformation module to create a transformation flow. This involves importing data into the module, and if required applying other transformations to it.
3. Use the PFA transformation step in your flow and configure it. (This will be covered in extensive detail in this guide.)
4. Execute the step to view the output generated by the model using your data.

Using a PFA model in the transformation flow

Follow these instructions to integrate your data science model using the PFA transformation step into Yellowfin.

1. Build your advanced analytical model and save it in a PFA format. This file's type could be JSON or YAML. (This file will be referred to as the PFA file in this guide.)
2. Navigate to Yellowfin's Data Transformation module. (Create button > Transformation Flow)
3. Create a transformation flow beginning with an input step to extract data. (Click here if you want to learn how to create a basic flow, or here to learn about the different ways data can be extracted).

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4. The extracted data will appear in the data preview panel. You can add more steps to further transform the data.
5. Once you are ready to use the PFA step to import your data science model, follow the procedure below.
6. Drag the PFA step from the transformation step panel onto the canvas. (The PFA step icon will be red by default when first dragged, this is because the step hasn't been configured yet.)

> ⚠️ If you don't see this step, ensure that you have installed the PFA plug-in.

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7. Using a connection point, create a connection from the last step to the PFA step.

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8. Click on the PFA step. Its configuration settings will appear in the transformation flow panel.
9. Specify the extension of the file, by choosing either the YAML or JSON option.
10. Then upload the PFA file containing your model. You can choose between the drag-and-drop option or load the file by providing a path.
11. If using the default drag-and-drop option, simply drag the file into the specified area. (Or click the area and browse for the file.)
    Note: If the incorrect file type is dragged in, then the following error will appear.

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12. Or to load the PFA file from a path, first enable the Load from Path toggle and then provide the path or URL.

    > ⚠ Provide the full path to either a server file or a website URL. In case of the URL, ensure that it is preceded by 'http:' or 'https:'.

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13. Then click on the Load File button. The step will then start parsing the file. However, if the wrong file path is provided, then the following error will be displayed.

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14. When the file has been uploaded, further fields will appear to configure the model's input. (**Note:** There might be a delay in these fields appearing.)

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15. **Note:** These fields will be labeled as the name of the variable, but if no name is specified in the PFA file, then the variable type shows up. For example:

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16. Map the model's data with the incoming data from the previous step. Ensure the data type matches as well. (It is assumed that the user knows the model in the PFA file well, and therefore can make the correct mappings.)
17. Click on the Save button.

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18. The result generated by the data science model will appear in a column in the data preview panel. **Note:** The name of this output column will be what has been specified in the PFA file. However if no output name is assigned, the column would be labelled as "PFA Output" by default.

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