User Manual

TeamAFK - Project Predire in Grafana

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Informations about the document

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Description

User manual made by *TeamAFK* for the project *Predire in Grafana*.

Changelog

Version	Date	Description	Name	Role

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1 Introduction

1.1 Descrizione generale

This document is “Predire in Grafana”’s user manual, a project developed by “Team AFK” for use on the Grafana platform.

1.2 Purpose of the document

This document’s purpose is to demonstrate how to use Predire in Grafana’s two software components: the training tool and the prediction plug-in for Grafana itself.

1.3 Predire in Grafana’s Purpose

Predire in Grafana is a platform which allows users to train linear regression or support vector machine algorithms using machine learning, and then use these algorithms to monitor and predict the behaviour of various systems of their choosing. In more detail: Users can supply a CSV file to the training tool and receive a JSON file containing values which can then be used to set and calibrate SVM or RL algorithms by coupling the values contained in the JSON file with data streams coming from a database.

1.4 Glossary

At the end of the document an appendix is available where explanations for new or ambiguous terms can be found. These are marked with a subscript G.

2 System Requirements

Here the requirements for use of the product are listed.

2.1 Minimum Hardware Requirements

Here the requirements for use of the product are listed.

- 2GB of RAM;
- 5GB of space on a drive;
- Dual core processor.

2.2 Compatible Operating Systems

The software was developed and tested on the following:

- Windows 10;
- MacOS 10.15;
- Ubuntu 18, 20.

2.3 Compatible Browsers

Predire in Grafana can be accessed through the following browsers:

- Google Chrome version 58 or newer;
- Mozilla Firefox version 54 or newer;
- Apple Safari version 10 or newer;
- Microsoft Edge version 14 or newer;
- Opera version 55 or newer.

3 The Training Tool

Here the appropriate way of using the training tool is explained in detail.

3.1 Access

The tool is hosted by a web page and can thus be accessed via browser.

3.2 Uploading a CSV File in the Tool

The user will need to feed the tool a CSV file containing properly marked values for the algorithm the user has intention of training.

3.3 Selection of the Algorithm

The user will then have to choose between training a support vector machine or a linear regression algorithm with the CSV file he has given to the tool. Should the user have uploaded training data incompatible with the selected algorithm, an error message will be displayed. To do this, the user can open a drop-down menu which displays the two algorithms that can be chosen, the preferred algorithm can at this point be selected.

3.4 Training Operation

The tool will now be able to perform the training operation, by simply having the user select the “Confirm” button. The tool will now have produced a JSON file containing the values needed for use in the plug-in which performs predictions.

3.5 Obtaining the JSON File

The user can now select the “download” button and receive the JSON file.

4 The Plug-in

Here a step by step explanation will guide the user to obtaning a prediction.

4.1 Loading the Plug-in

1. The user will have to select the plus icon from the sidebar, from which a drop-down menu containing four options will appear, from this menu the “dashboard” option has to be selected.
2. The user will now have to select the “Chose Visualization” button.
3. Finally, by pressing on the “Predire in Grafana” button, the user can use the plug-in.

4.2 Loading a JSON File

The user can select the “Insert File” button contained in the “Inserimento File JSON” section. This will open a window from which the JSON file can be selected. The content of the JSON file will be displayed in a section to the right of the previously mentioned section.

4.3 Connecting the Nodes

1. The user can choose from the “lista predittori” section which queries are to be associated with which nodes, by opening the drop down menu under “select predictors”.
2. The user can now select which part of the data stream to couple with a predictor in the “selezione del flusso dati” section, by opening the drop down menu to the right of “select query”.
3. Maximum and minimum thresholds can also be set in the “impostazione soglie” section, by inserting numbers in the dedicated boxes.
4. Finally, the user can confirm the various operations in the “Conferma Collegamento” section by pressing “conferma collegamento”. In this section the user can also view all the predictor-data stream connections that have been made.

4.4 Modifying the connections

1. The user can select the connection he has intention of modifying in the “lista collegamenti” section by pressing on the “selezionare collegamento” button and choosing a connection from the ones displayed.
2. In the “opzioni collegamenti” section the user can modify, disconnect or create new connections between nodes by selecting the appropriate buttons.

4.5 Prediction Operations