PEA-m6A User Manual (version 1.0)

- PEA-m6A is an ensemble learning framework for predicting m6A modifications at regional-scale.
- PEA-m6A consists of four modules:**Sample Preparation, Feature Encoding, Model Development and Model Assessment**, each of which contains a comprehensive collection of functions with pre-specified parameters available.
- PEA-m6A was powered with an advanced packaging technology, which enables compatibility and portability.
- PEA-m6A project is hosted on http://github.com/cma2015/PEA-m6A
- PEA-m6A docker image is available at http://hub.docker.com/r/malab/peam6a
- PEA-m6A server can be accessed via http://peam6a.omstudio.cloud

PEA-m6A Model Assessment

This module accesses the consturction of each feature to the model output by using the Shapley Additive Explanations(SHAP) algorithms.

Functions	Description	Input	Output	Reference
Features Importance Analysis	accesses the consturction of each feature to the model output by using the Shapley Additive Explanations(SHAP) algorithms.	Train sets , features names in TXT format and model in binary format	The SHAP summary plot in PDF format and The SHAP depenence plot in PDF format	In-house scripts

Features importance analysis

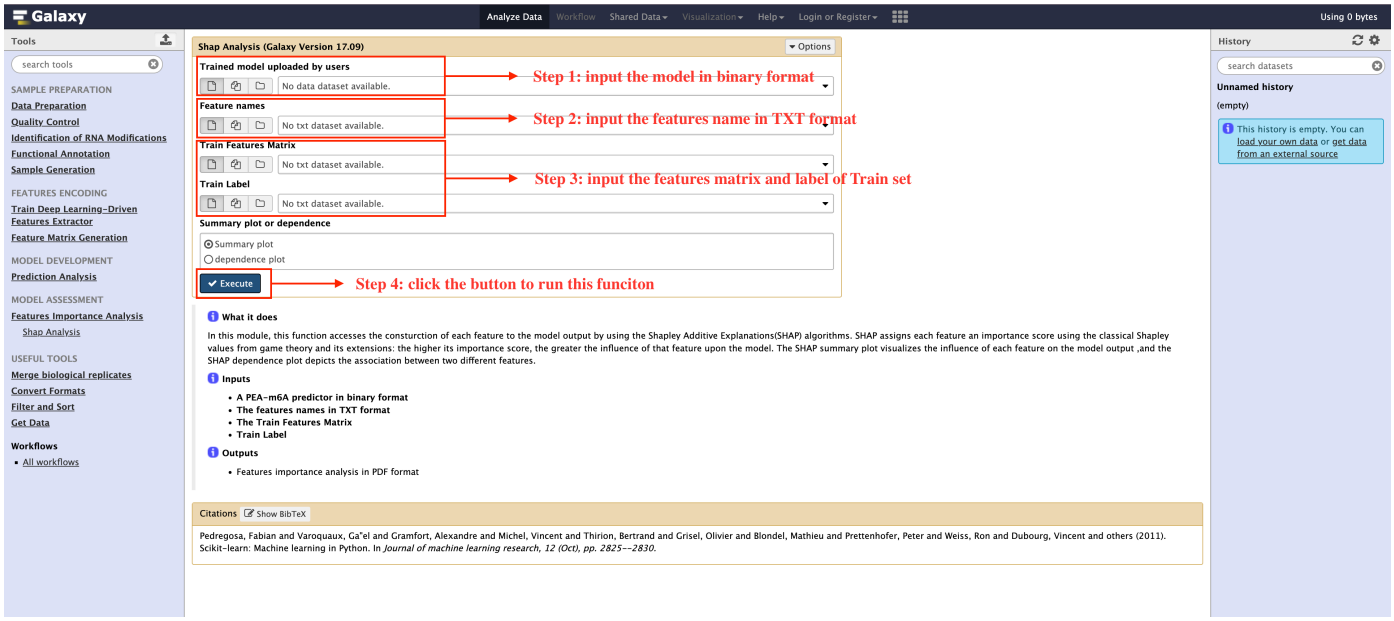
This function accesses the consturction of each feature to the model output by using the Shapley Additive Explanations(SHAP) algorithms. SHAP assigns each feature an importance score using the classical Shapley values from game theory and its extensions: the higher its importance score, the greater the influence of that feature upon the model. The SHAP summary plot visualizes the influence of each feature on the model output ,and the SHAP dependence plot depicts the association between two different features.

Input

- **Train sets**: which can be generated by function **Prediction System Constrction**
- **Features names in TXT format**
- **Predictive model in binary format**:which can be generated by function **Prediction System Constrction**

Output

- **The SHAP summary plot in PDF format**
- **The SHAP depenence plot in PDF format**


Galaxy
Analyze Data
Workflow
Shared Data
Visualization
Help
Login or Register
Using 0 bytes
Tools
search tools
SAMPLE PREPARATION
Data Preparation
Quality Control
Identification of RNA Modifications
Functional Annotation
Sample Generation
FEATURES ENCODING
Train Deep Learning-Driven Features Extractor
Feature Matrix Generation
MODEL DEVELOPMENT
Prediction Analysis
MODEL ASSESSMENT
Features Importance Analysis
Shap Analysis
USEFUL TOOLS
Merge biological replicates
Convert Formats
Filter and Sort
Get Data
Workflows
All workflows
Shap Analysis (Galaxy Version 17.09)
Options
Trained model uploaded by users
No data dataset available.
Step 1: input the model in binary format
Feature names
No txt dataset available.
Step 2: input the features name in TXT format
Train Features Matrix
No txt dataset available.
Train Label
No txt dataset available.
Step 3: input the features matrix and label of Train set
Summary plot or dependence
Summary plot
dependence plot
Execute
Step 4: click the button to run this funciton
What it does
In this module, this function accesses the consturction of each feature to the model output by using the Shapley Additive Explanations(SHAP) algorithms. SHAP assigns each feature an importance score using the classical Shapley values from game theory and its extensions: the higher its importance score, the greater the influence of that feature upon the model. The SHAP summary plot visualizes the influence of each feature on the model output ,and the SHAP dependence plot depicts the association between two different features.
Inputs
A PEA-m6A predictor in binary format
The features names in TXT format
The Train Features Matrix
Train Label
Outputs
Features importance analysis in PDF format
Citations
Show BibTeX
Pedregosa, Fabian and Varoquaux, Ga"el and Gramfort, Alexandre and Michel, Vincent and Thirion, Bertrand and Grisel, Olivier and Blondel, Mathieu and Prettenhofer, Peter and Weiss, Ron and Dubourg, Vincent and others (2011). Scikit-learn: Machine learning in Python. In Journal of machine learning research, 12 (Oct), pp. 2825--2830.
History
search datasets
Unnamed history
(empty)
This history is empty. You can load your own data or get data from an external source