
XLearning

Release 0.0.2

Rongting Huang

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ABOUT XLEARNING

A small library of machine learning models and utility & plotting functions:

1. a set of utility functions, e.g., wrap function for cross-validation on regression and classification models
2. a set of small models, e.g., mixture of linear regression model
3. a set of plotting functions, e.g., *corr_plot*, *ROC_curve*, *PR_curve*

1.1 Installation

1.1.1 Easy install

xlearning is available through [pypi](#). To install, type the following command line, and add `-U` for upgrading:

```
pip install -U xlearning
```

Alternatively, you can install from this GitHub repository for latest (often development) version by following command line

```
pip install -U git+https://github.com/Rongtingting/XLearning
```

In either case, if you don't have write permission for your current Python environment, add `--user`, but check the previous section on create your own conda environment.

To remove the package, type the following command line,

```
pip uninstall xlearning
```

1.1.2 Issues

If you have any issue, please report it to the issue on [XLearning github](#).

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```

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    "# define the model objectsn", "linreg = linear_model.LinearRegression()n",
    "lassoreg = linear_model.LassoCV(cv=3)n", "randforest = RandomForestRe-
    gressor(n_estimators=100, n_jobs=-1)n", "n", "fig = plt.figure(figsize=(10,
    3.5), dpi=80)n", "plt.subplot(1,3,1)n", "# Cross-Validation wrap & corr_plotn",
```



```

“CV = CrossValidation(X,Y)n”, “Y_pre = CV.cv_regression(linreg)n”,
“corr_plot(Y, Y_pre, size=20)n”, “n”, “plt.xlabel("observation")n”,
“plt.ylabel("prediction")n”, “plt.title("linear regression")n”, “plt.grid(alpha=0.2)n”,
“# pl.ylim(-6,4)n”, “n”, “plt.subplot(1,3,2)n”, “CV = CrossValidation(X,Y)n”,
“Y_pre = CV.cv_regression(lassoreg)n”, “corr_plot(Y, Y_pre, size=20)n”,
“plt.xlabel("observation")n”, “plt.ylabel("prediction")n”, “plt.title("Lasso regres-
sion")n”, “plt.grid(alpha=0.2)n”, “# pl.ylim(-6,4)n”, “n”, “plt.subplot(1,3,3)n”, “CV =
CrossValidation(X,Y)n”, “Y_pre = CV.cv_regression(randforest)n”, “corr_plot(Y,
Y_pre, size=20)n”, “plt.xlabel("observation")n”, “plt.ylabel("prediction")n”,
“plt.title("random forest regression")n”, “plt.grid(alpha=0.2)n”, “# pl.ylim(-
6,4)n”, “n”, “plt.tight_layout()n”, “# fig.savefig("cv_regression.pdf", dpi=300,
bbox_inches='tight')n”, “plt.show()”

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= RandomForestClassifier(n_estimators=100, n_jobs=-1)n”, “n”, “CV = CrossVal-
idation(X1, Y1)n”, “Y1_pre, Y1_score = CV.cv_classification(model=RF_class,
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folds=10)n”, “n”, “fig = plt.figure(figsize=(4.5, 3.5), dpi=80)n”, “ROC_plot(Y1,
Y1_score[:,1], legend_label="Random Forest", threshold=0.5, base_line=False)n”,
“ROC_plot(Y1, Y2_score[:,1], legend_label="Logistic Regress", threshold=0.5)n”,

```

```
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            base_line=False)n", "PR_curve(Y1, Y2_score[:,1], legend_label="Logistic Regress",
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