9-dars (Report)

Model Selection

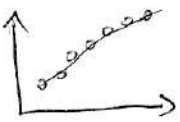
ML algorithms

- Algorithm = ketma-ketlik
- O'qituvchi Model = Algorithm

Supervised ML algorithms family: (Classification, Regression) uchun alohida-alohida family bor

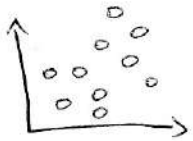
Algorithm Family:

Linear:
- Linear Regression (Regression u/n ishlaydi)
- Logistic Regression (Classification u/n ishlaydi



Tree-Based (Classification/Regression)
- Decision Tree
- Random Forest

Distance-Based
- KNN
- SVM



Ensemble (Bir nechata algorithmlarni o'zichiga oladi)
- Random Forest
- Gradient Boosting

Algorithms:
- Linear
- Complex (Non-linear)

Logistic Regression (LR)

(Classification, sodda, kichik dataset uchun agarga 'binary' uchun yaxshi ishlaydi)
(xRegression uchun ishlamaydi)

LR bosqichlari:
- Data Preprocessing!
- x (input all), y (output) ajratib olish
- splitting (train, test)
- training (fitting)
- predicting
- evaluating

→ - x va Y ga ajratib olish /
x = df.drop('Ustunnomi (output)', axis=1)
y = df['Ustunnomi (output)'].astype(int)

- from sklearn.model_selection import train_test_split
x_train, x_test, y_train, y_test = train_test_split(x, y, test_size=0.2)

yoki x_train, x_test, y_train, y_test = train_test_split(x, y, test_size=0.2, random_state=42)
→ stabil ishlashi u/n

```
from sklearn.linear_model import LogisticRegression
log_reg = LogisticRegression()
log_reg
log_reg.fit(x_train, y_train)
```

(Bunda target (output) [0,1] qiymat yoki True/False qiymat olishi kerak)

x_train.shape
y_train.shape → Teng bo'lishi kerak
x_test.shape
y_test.shape → Sonlar teng bo'lishi kerak