

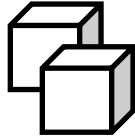
Models

Models

High-Level Analogy



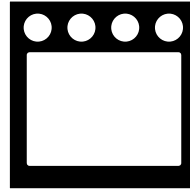
Apple



Sugar



Eggs



Baking Oven



Recipe



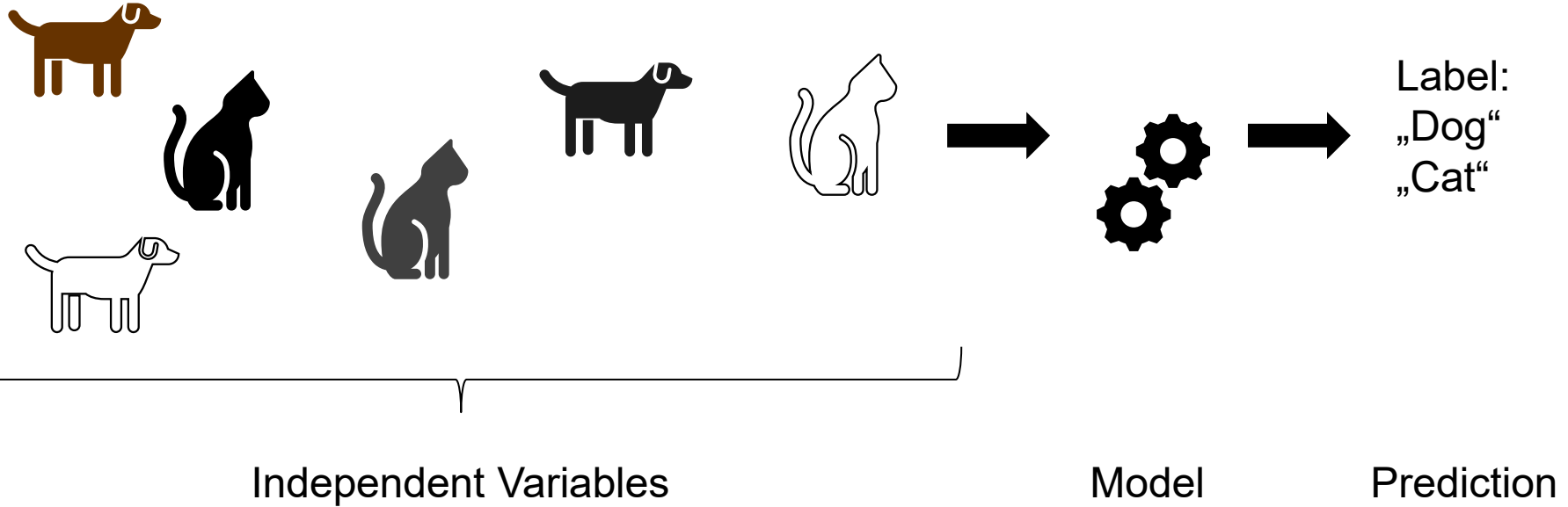
Apple Pie

Ingredients + technical equipment
(Requirements)

Result

Models

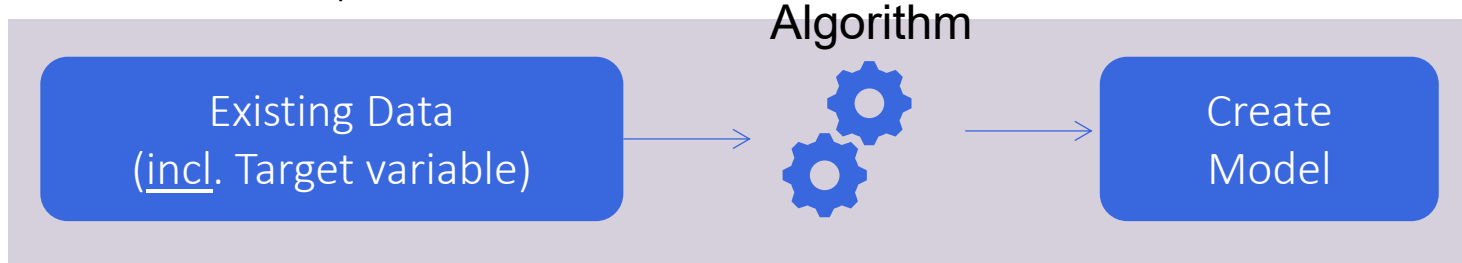
High-Level Analogy



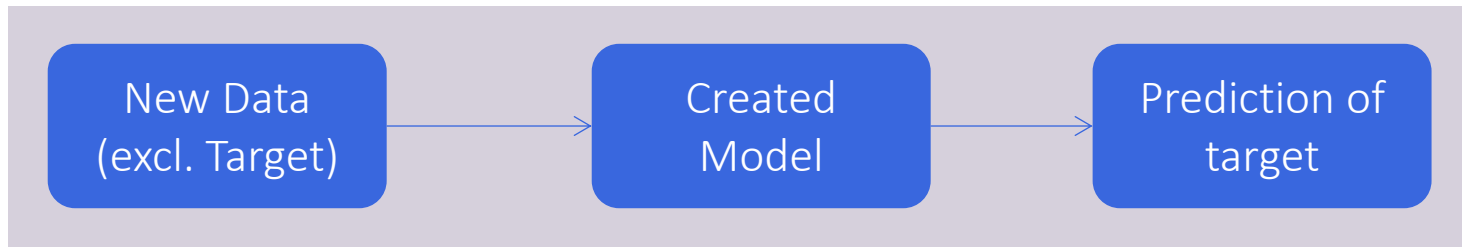
Models

Model Development and -application

Model Development

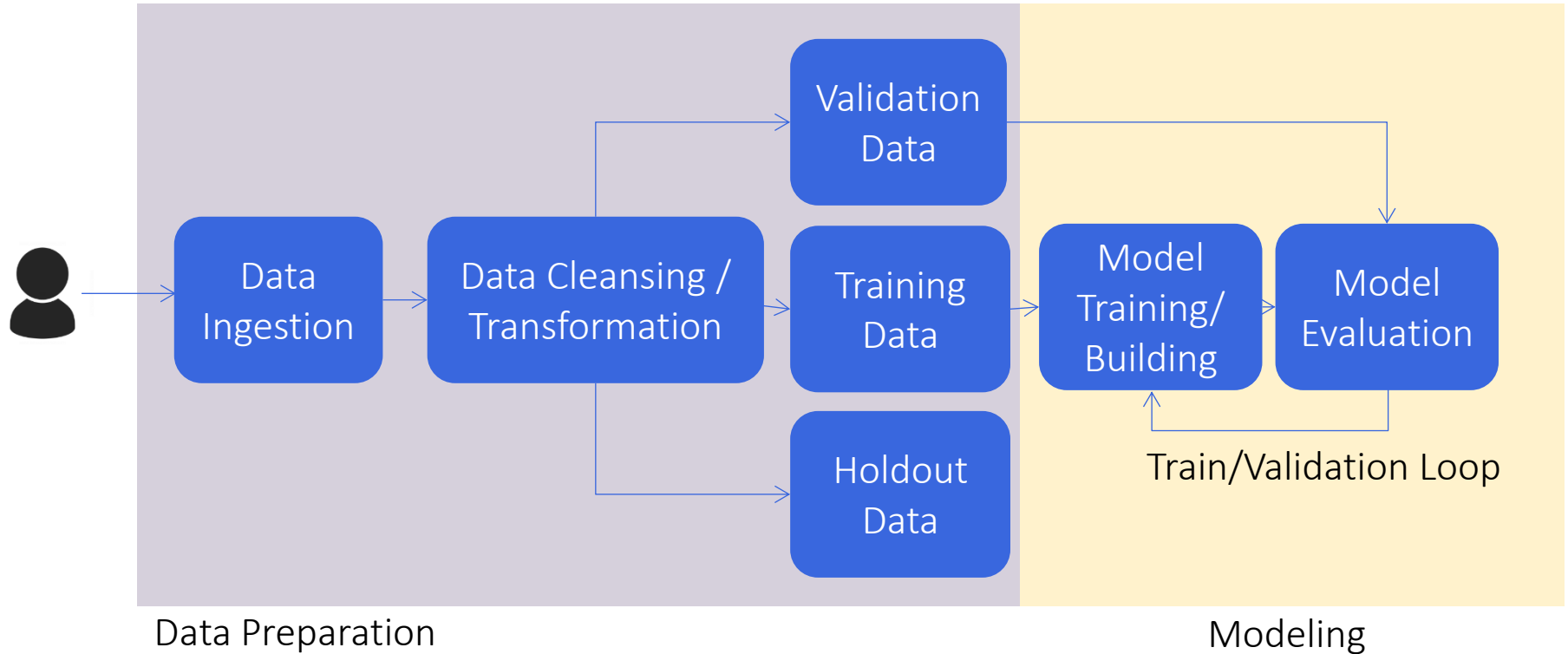


Model Application



Models

Detailed Model Development

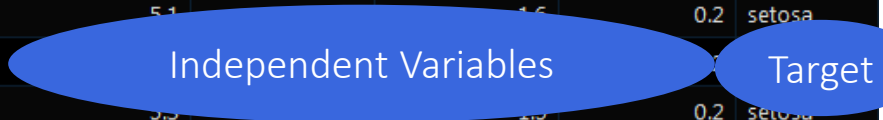


Models

Example

- Task: Target variable (dependent variable) should be predicted.
- Predictors (independent variables) are used to create a model based on an existing relationship between independent and dependent variable.
- Model „learns“ relationship
- Learned model can then be applied to new data.

X1	X2	X3	X4	Y
Sepal.Length	Sepal.Width	Petal.Length	Petal.Width	Species
4.8	3.0	1.4	0.3	setosa
5.1	3.6	1.6	0.2	setosa
5.3	3.6	1.9	0.2	setosa
5.0	3.3	1.4	0.2	setosa
7.0	3.2	4.7	1.4	versicolor
6.4	3.2	4.5	1.5	versicolor
6.9	3.1	4.9	1.5	versicolor
5.5	2.3	4.0	1.3	versicolor
6.5	2.8	4.6	1.5	versicolor
5.7	2.8	4.5	1.3	versicolor
6.3	3.3	4.7	1.6	versicolor
4.9	2.4	3.3	1.0	versicolor
6.6	2.9	4.6	1.3	versicolor



A blue oval labeled "Independent Variables" encompasses the first four columns of the table (X1, X2, X3, X4). A smaller blue oval labeled "Target" encompasses the fifth column (Y). The "Independent Variables" oval is larger and positioned to the left of the "Target" oval.