

AI in Healthcare

MATLAB Assignments

It is required to complete only **one** MATLAB assignment, choose assignment 1 or assignment 2.

- ▶ The assignment 1 is more difficult. It is recommended for students with previous coding experience or for a better understanding in linear regression.
- ▶ The assignment 2 is easier. It is recommended for students who want to know basics or machine learning, but are not planning to implement it.

Present the assignment in moodle, deadline is 16th of March.

MATLAB Assignment 1

Find estimated birth weight when the gestational age is 34 weeks. To do that, use MATLAB to create linear regression model and using the obtained model, estimate birth weight.

- ▶ Use gradient descent. Plot cost for each step.
- ▶ Plot data and linear fit to the data

MATLAB Assignment 2

You measure the cell radius $13.5\text{ }\mu\text{m}$ and cell symmetry 0.193 . What is the probability of this cell being malignant?

- ▶ Create logistic regression model in MATLAB using function *mnrfit*
- ▶ Use the obtained model to estimate the probability using function *mnrval*
- ▶ In X, first row is cell radius and second row is cell symmetry. Y is 1 if tumor is malignant and 0 if benign.
- ▶ Plot data and predicted line separating malignant and benign data.