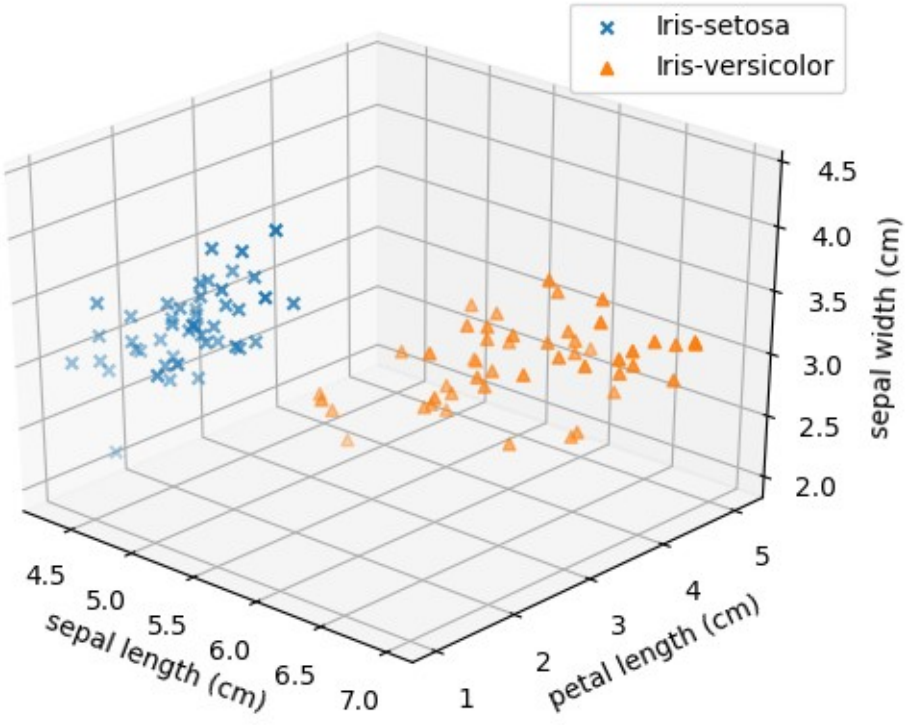
Classification Lab Assignment

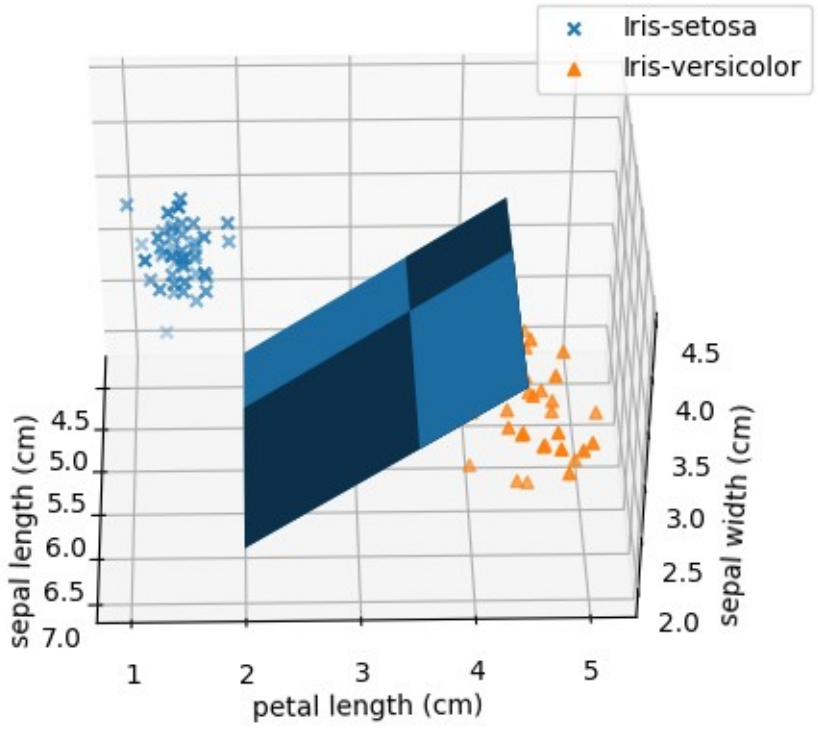
1 Visualize the data



2 Implement and train a logistic regression model using stochastic gradient descent

- for the values T = 100, k = 20 and eta = 0.1 the resulting theta_hat is [[0.047166], [0.23632473], [0.16307115], [0.06753487]]
- The given values do not result in a well trained model since the hypothesis function returns points that are all classified around the label 1
- Better results can be achieved with the values T = 10^5, k = 100 and eta = 0.1 ther resulting theta_hat is [[0.14983426], [0.19345938], [0.8877948], [-1.43328427]] however it is more costly in computation.

3 Plot the separating hyperplane



plotted with T = 10^6, k = 100 and eta = 0.1