# Basic Multiclass Regression:

https://towardsdatascience.com/multiclass-classification-algorithm-from-scratch-with-a-project-in-python-step-by-step-guide-485a83c79992

# Advanced Content about MultiClass:

https://scikit-learn.org/stable/modules/multiclass.html

### Different Cost Functions:

- <a href="https://towardsdatascience.com/machine-learning-fundamentals-via-linear-regression-41a5d11f5220">https://towardsdatascience.com/machine-learning-fundamentals-via-linear-regression-41a5d11f5220</a>
- <a href="https://www.analyticsvidhya.com/blog/2021/02/cost-function-is-no-rocket-science/">https://www.analyticsvidhya.com/blog/2021/02/cost-function-is-no-rocket-science/</a>
- For more information : <a href="https://stats.stackexchange.com/questions/154879/a-list-of-cost-functions-u">https://stats.stackexchange.com/questions/154879/a-list-of-cost-functions-u</a> sed-in-neural-networks-alongside-applications

# Optimization Algorithms for Neural Networks:

• <a href="https://towardsdatascience.com/optimization-algorithms-in-deep-learning-1">https://towardsdatascience.com/optimization-algorithms-in-deep-learning-1</a> 91bfc2737a4

Note: Please do spare some time to read this entire article <a href="https://www.coursera.org/learn/deep-neural-network?specialization=deep-learning">https://www.coursera.org/learn/deep-neural-network?specialization=deep-learning</a>

### Normalization

- Deep Learning AI lecture: C2W1L09, C2W3L04-C2W3L07
  - https://www.youtube.com/watch?v=tNIpEZLv\_eg
- Relevant articles
  - <a href="https://medium.com/@urvashilluniya/why-data-normalization-is-necessary-for-machine-learning-models-681b65a05029">https://medium.com/@urvashilluniya/why-data-normalization-is-necessary-for-machine-learning-models-681b65a05029</a>
  - https://machinelearningmastery.com/batch-normalization-for-training-of-de ep-neural-networks/

# **Optimizers**

- Deep Learning AI: C2W2L01-C2W2L09
  - o <a href="https://www.youtube.com/watch?v=4gJaSmvhxi8">https://www.youtube.com/watch?v=4gJaSmvhxi8</a>
- Relevant articles
  - o <a href="https://towardsdatascience.com/deep-learning-optimizers-436171c9e23f">https://towardsdatascience.com/deep-learning-optimizers-436171c9e23f</a>
  - https://towardsdatascience.com/optimizers-for-training-neural-network-594
    50d71caf6

Refer the below website for better understanding of optimizing processes and optimizers. You can try different learning rates for different cost functions and optimizers at real time.

• <a href="https://www.deeplearning.ai/ai-notes/optimization/">https://www.deeplearning.ai/ai-notes/optimization/</a>

(Katanforoosh, Kunin et al., "Parameter optimization in neural networks", deeplearning.ai, 2019.)