Machine Learning for Engineering and Science Applications
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Differentiating the sigmoid

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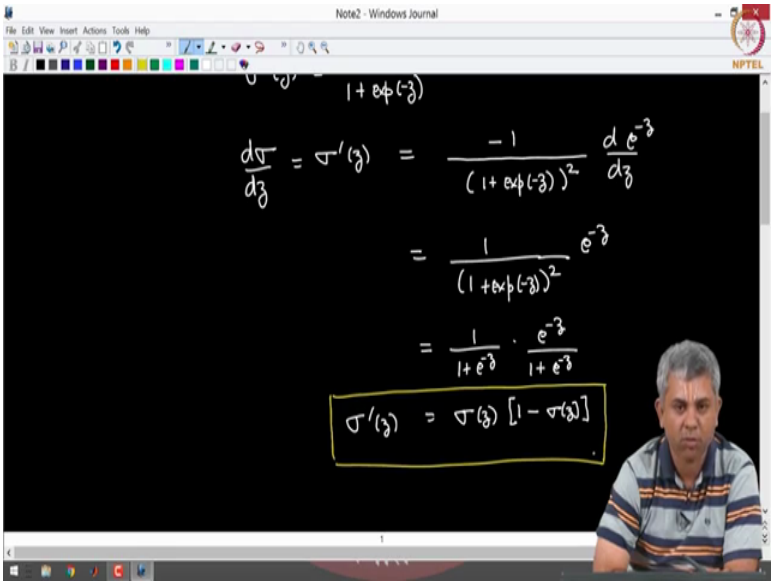

In this video which is a very short video, we just looked at the differential of the sigmoid function. This is used very very often. So we will just do that very very quickly. So remember that sigmoid of z is equal to 1 by 1 plus e to the power minus- z. So if I do d sigma d z, that is what we call sigma prime of z. This is simply minus- 1 by 1 plus e to the power minus- z the whole square, multiplied by the derivative of e to the power minus- z. So this is equal to 1 by 1 plus…So this can be written as e to the power minus- z by 1 plus e to the power minus- z.

This of course is simply sigmoid of z and this can be written as 1 minus- sigmoid of z. So this gives us the relation that sigmoid prime of z is sigmoid times 1 minus- sigmoid. And we use this a couple of times while doing back propagation. Thank you.