Welcome

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Welcome to Applied Deep Learning

We will be reading the Deep Learning with R book.

Or if you choose to use Python, you will be reading the Deep Learning with Python book.
RStudio has written an R package `keras` to access keras and tensorflow.

See the RStudio keras to get started.

Note that after you install the package you need to run the following to get the package installed.

```r
> library(keras)
> install_keras()
```

Here is the link to the keras website for Python.
RStudio has written an R package *tensorflow* to access tensorflow. See the RStudio tensorflow. This R package is installed when the keras R package is installed.

Here is the link to the tensorflow website.
Playground

Check out the tensorflow playground to experiment with neural networks.

Play with the different dataset and check to see how more nodes change the predictions and how more layers change the predictions. Be sure to watch how the Loss gets smaller.
Deep Learning is useful for

- image recognition
- speech translation
According to the author, about the book

In the Preface:

“radically democratize it”

“I wrote it with a focus on making the concepts behind deep learning, and their implementation, as approachable as possible. Doing so didn’t require me to dumb down anything—I strongly believe that there are no difficult ideas in deep learning. I hope you’ll find this book valuable and that it will enable you to begin building intelligent applications and solve the problems that matter to you.”
First look

- MNIST Problem
- See the Chapter 2 code.
Tensors

- Scalars (0D tensors)
- Vectors (1D tensors)
- Matrices (2D tensors)
- 3D tensors and higher-dimensional tensors