Introduction to Keras

Presenters: Jay Barber and Dan Pagendam

The Software Stack

Google Colab

- For today, we can avoid all of the hard work that can be required to get Keras up and running on your local machine.
- Google Colab provides a cloud-based virtual machine that you can run todays exercises in.
- Colab lets you run R within an iPython notebook.
- If you decide that you want to do more with Keras after today, it is well worth installing it on your local machine and it works very nicely with RStudio.

deepLearningRshort

- We have created an R Package that contains all of the data used in todays exercises.
- It also contains a handful of functions that make fitting the models in the exercises a bit simpler.
- You can install the package using devtools::github_install.
- https://github.com/dpagendam/deepLearningRshort

Launching Colab into R

- Open a web browser and navigate to:
  - colab.to/r -Each time you open this up, you'll be starting with a blank R session and will need to install your favourites. At a minimum, I'd suggest:
  - install.packages("keras")
  - install.packages("ggplot2")

Keras and Tensorflow

- There are R packages for both Keras and Tensorflow.
- Tensorflow is an open source library for building machine learning models at large scale.
- Keras is a high level API for building neural networks, written in Python. It can run on top of Tensorflow, Theano or CNTK.

Beyond Today

- If you enjoy today and want to delve further into Deep Learning, we can highly recommend the book by Fracois Chollet and J.J. Allaire: