**Fall 2017 MLWG - what’s the plan?**

We want to have a focus on neural networks.

Kaggle competitions: <https://www.kaggle.com/competitions>

* Zillow or Passenger screening?

Motivating learning NN by examples in Python and R, using TensorFlow. Supplementing with Numpy/base R code.

* TensorFlow (<https://www.tensorflow.org/>)
* R wrapper for TensorFlow (<https://tensorflow.rstudio.com/>)
* R wrapper for Keras <https://github.com/rstudio/keras>
* kerasR: <https://github.com/statsmaths/kerasR>

Make sure Benten is set up - check out zero to jupyterhub instructions here: <http://zero-to-jupyterhub.readthedocs.io/en/latest/>

* Talk to Chris Kennedy - do we have to re-BLAS numpy for multi-threading? (e.g., build with Atlas, etc.). Does R require something similar?
* Work more closely with Cloud Working Group

**We have 7 sessions MLWG Fall 2017:**

Session 1. Illustrate cool use cases of neural networks (Deb Python lead? Sam help with Imagenet/Word2vec)

* Refresher on what we did in the summer (here’s a NN in 10 mins)
* Imagenet (how to do in Python/R)
* Word2vec (how to do in Python/R)

Session 2. Kaggle beginnings (Geoff Python lead? Chris K. talk about benten a little? Should we talk about Savio also?) (Someone to talk 5/10 minutes about GPUs - diff between gaming and ML GPUs, how to optimize code for them)

* Choose Kaggle, review dataset/dataset exploration, review approaches of others, ask questions about strengths and weaknesses of past approaches, solidify our direction.

Session 3. (Sam do lit review on filters)

* Shared Google Doc/repo with code and notebooks; have one person submit to benten? Discuss different approaches? What kinds of layers should we try?
* Lit reviews for using filters, what activation layers are optimal, etc.

Session 4.

Session 5.

Session 6. Debug Kaggle submission

Session 7. Show and tell/Q&A/champagne

<https://en.wikipedia.org/wiki/Process_and_Reality>