Need to determine which deep learning library we are going to use for integration with the LIDA framework and for the flagship project.

Criteria for evaluating libraries:

1. Correctness
   * Track record of working for problems in our domain of interest
2. Contains all needed DL algorithms
3. Actively maintained
   * support from development issues?
   * future enhancements anticipated?
4. Intuitive API
5. Low level of integration effort
   * Least dependencies
6. Used widely for academic research
7. High performance (e.g., GPU support)
8. Portable

Comparisons of the most popular deep learning libraries at the following links:

* http://www.kdnuggets.com/2015/06/popular-deep-learning-tools.html
* https://www.reddit.com/r/MachineLearning/comments/2c9x0s/best\_framework\_for\_deep\_neural\_nets/
* http://deeplearning4j.org/compare-dl4j-torch7-pylearn.html

Java Deep Learning Libraries:

1. DL4J (<http://deeplearning4j.org/>)

Deeplearning4j is the first commercial-grade, open-source, distributed deep-learning library written for Java and Scala. Integrated with Hadoop and Spark, DL4J is designed to be used in business environments, rather than as a research tool.

Skymind is its commercial support arm.

1. Neuroph (<http://neuroph.sourceforge.net/>)

Java deep learning algorithms and deep neural networks with gpu acceleration.

1. NeuralNetworks - <https://github.com/ivan-vasilev/neuralnetworks>

This is a Java implementation of some of the algorithms for training deep neural networks. GPU support is provided via OpenCL and Aparapi. The architecture is designed with modularity, extensibility and pluggability in mind.

Supported Neural network types

* + Multilayer perceptron
  + Restricted Boltzmann Machine
  + Autoencoder
  + Deep belief network
  + Stacked autoencoder
  + Convolutional networks with max pooling, average poolng and stochastic pooling.

1. Weka?
   1. Found reference that there were several neural network implementations in Weka. Not sure if it is suitable for what we need.

Alternative would be to use a library for another language (C or Python?) and translate to java.

Posting of ongoing documentation:

* Suggestion of posting documentation related to meeting notes and presentation material to github under the ccrg-docs repository.