Scala for Machine Learning – 2nd Edition (*est. fall 2015*)

The second edition of Scala for Machine Learning will introduce few new concepts

- Monadic data transformation from explicit models
- Monadic data transformation for models generated through training (supervised learning)
- Streams and views
- Useful patterns (Magnet, Type classes)
- Covariant and contravariant functors

As far as the content is concerned, the upgrade will focus on

- Design template for unsupervised and supervised learning algorithm
- Additional tips regarding Scala language idioms
- Smoother introduction to algorithms definition and implementation
- Detailed description of some key algorithms
- Example of supervised learning algorithms using Spark
- Additional test cases
- More systematic validation code using F1 measure
- Corrected mathematical formulas

The list of changes in the code base (github) includes:

- Broader uses of higher order method such as *aggregate*, *collect*, *partition*, *groupBy* ...
- Strict monadic encoding of data transformation from an explicit model, and data transformation from a model derived from a training set
- Correction and clarification of some statistical formulas
- Implementation of magnet pattern for overloaded methods with different return types
- Standardization of the application of tail recursion for dynamic programming algorithms
- Uses of views to reduce unecessary generation of objects
- Introduction of streams in Chapter 12
- Consistent uses of annotations.
- Packaging Apache Commons Math library
- Stricter adherence to coding convention for *implicits*, *traits*, *abstract classes*
- Improved (consistency) scaladoc comments
- Updates versions of Scala, Akka and Apache Spark.