## **Algorithms**

* SimpleFill: Replaces missing entries with the mean or median of each column.
* KNN: Nearest neighbor imputations which weights samples using the mean squared difference on features for which two rows both have observed data.
* SoftImpute: Matrix completion by iterative soft thresholding of SVD decompositions. Inspired by the [softImpute](https://web.stanford.edu/~hastie/swData/softImpute/vignette.html) package for R, which is based on [Spectral Regularization Algorithms for Learning Large Incomplete Matrices](http://web.stanford.edu/~hastie/Papers/mazumder10a.pdf) by Mazumder et. al.
* IterativeImputer: A strategy for imputing missing values by modeling each feature with missing values as a function of other features in a round-robin fashion. A stub that links to scikit-learn's [IterativeImputer](https://scikit-learn.org/stable/modules/generated/sklearn.impute.IterativeImputer.html).
* IterativeSVD: Matrix completion by iterative low-rank SVD decomposition. Should be similar to SVDimpute from [Missing value estimation methods for DNA microarrays](http://www.ncbi.nlm.nih.gov/pubmed/11395428) by Troyanskaya et. al.
* MatrixFactorization: Direct factorization of the incomplete matrix into low-rank U and V, with per-row and per-column biases, as well as a global bias. Solved by SGD in pure numpy.
* NuclearNormMinimization: Simple implementation of [Exact Matrix Completion via Convex Optimization](http://statweb.stanford.edu/~candes/papers/MatrixCompletion.pdf) by Emmanuel Candes and Benjamin Recht using [cvxpy](http://www.cvxpy.org/). Too slow for large matrices.
* BiScaler: Iterative estimation of row/column means and standard deviations to get doubly normalized matrix. Not guaranteed to converge but works well in practice. Taken from [Matrix Completion and Low-Rank SVD via Fast Alternating Least Squares](http://arxiv.org/abs/1410.2596).