Research Paper

Topic: Analyzing the effectiveness of bio-inspired metaheuristic algorithms in optimizing simple collaborative filtering systems

* Use SVD algorithm with RMSE as the accuracy measure/ intensity for the fireflies
* The firefly algorithm will be used to metaheuristically determine the optimal hyper parameters for the SVD algorithm
* n\_factors, n\_epochs, lr\_all, reg\_all are the hyper parameters that will be tested (<https://medium.com/towards-data-science/svd-where-model-tuning-goes-wrong-61c269402919>)

A GitHub repo with evaluation scripts already built will be molded into the actual testing code.

Each firefly contains a random set of the hyperparameters and the fitness value of each firefly (RMSE) will be tested on a small test-set of 2000 entries after they have been trained with around 10000 entries in the test-set.

Firefly algorithm implementation -> https://docs.microsoft.com/en-us/archive/msdn-magazine/2015/june/test-run-firefly-algorithm-optimization

Sources:

<https://medium.com/towards-data-science/svd-where-model-tuning-goes-wrong-61c269402919>

<https://sifter.org/~simon/journal/20061211.html>

<https://datajobs.com/data-science-repo/Recommender-Systems-%5BNetflix%5D.pdf>

https://www.sciencedirect.com/science/article/abs/pii/S0925231222006853

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