1. Objective of whole project.

Compare MADGE data to other machine learning algorithms like SVM and neural networks. Accuracy and speed will be the two most optimized features, with accuracy without overfitting as the most interesting piece to explore.

1. What was implemented last week.

The week before, we discussed the various sigmas that were being tested showed accuracy that was not above ~70%. Those calculations tested sigmas were using the same f values, regardless of what the range of the data are.

For a sigma of 1, a W of 1, and a D of 1000, our W/f would be 1 and our D/f would be 1000. If we adjust f, both the weight of the x Gaussian and the weight of the y Gaussian are adjusted equally.

There is no malleability of the weight of each dimension. I’ve been trying to test various ratios to see if there is a non-symmetrical sigma-width-ratio that is applicable here.

1. Plans for upcoming week.

Take a look at the Theil–Sen estimator for continued work.

1. Objective of whole project.

Compare MADGE data to other machine learning algorithms like SVM and neural networks. Accuracy and speed will be the two most optimized features, with accuracy without overfitting as the most interesting piece to explore.

1. What was implemented last week.

The method that uses a factoring, scaling sigma was successfully implemented and tested on various stretched version of spiral data. The effectiveness of the method was as followed:

1. Square data (data that was stretched with the same factor for all dimensions) had roughly the same optimal scaling sigma method. A maximum accuracy of ~99% could be found for these square data.
2. Non-Square data did not have the same optimal scaling sigma. A maximum accuracy could not be achieved higher than ~60% for higher stretching factors.
3. The sigma factors were unimodal, and had an absolute maximum, regardless of the stretch factor.
4. Plans for upcoming week.

Glean ideas from *Optimal breast cancer classification using Gauss–Newton representation based algorithm* and try new sigma implementations.