Use of fourier coefficients for mapping instead of neural networks.

We aim to look into the possibility of fourier based machine learning techniques instead of the standard neural networks for machine learning problems.

We shall measure this model on image classification and try to optimise for the same.

Goals:

1. To implement a fourier based machine learning model to learn a mapping against an input and output.
2. Compare it to neural networks to measure any tangible improvement or deterioration in the given tasks.

Review of Literature:

The research paper ‘A Fourier-based machine learning technique with application in engineering’(Michaël Peigney. A Fourier-based machine learning technique with application in engineering. International Journal for Numerical Methods in Engineering, Wiley, In press, ff10.1002/nme.6565ff. ffhal03038092f) lays an excellent foundation to build upon dealing with the various difficulties which would be required to be dealt with to implement a fourier based model.

The paper however, does not attempt to measure and compare it to neural networks.

It shows fourier based models as a possibility but does not look into its feasibility.

We shall look into it with the aim of using it in practical applications.

Ingredients: