

Summer School on Effective HPC for Climate and Weather

Motivational Letter

I am a second year PhD student at the University of Reading with the project title of 'Deep Learning Atmospheric Features', where I apply Deep Learning techniques to problems in the meteorological domain.

At the time of writing, I have obtained a Deep Learning model that can be used to classify whether data from the ERA-Interim dataset does or does not have a Tropical Cyclone present. I am now attempting to integrate this into the Met Office's Unified Model.

This summer school would help to expose me to certain aspects of the modelling of the atmosphere, namely how modelling is performed on supercomputers, especially how data is handled across nodes and processors.

Given my background in modelling and the meteorological base of knowledge, as well as knowledge on Deep Learning, I would think that I can bring additional insights to the summer school which would help diversify the knowledge gained during this summer school.

Hence, I would like to propose as a tentative Academic Project, whether Deep Learning can bring a better insight to some aspect of modelling the atmosphere, for example, can an unsupervised technique cluster examples of some phenomena to show some significant physical aspect?