CSE541: Computer Vision

Weekly Report 2

Group - 9

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Predicting Spatio-temporal temperature variations using Machine learning models

We are starting the usage of Principle Component Analysis (PCA) and Proper Orthogonal Decomposition (POD) methods to our dataset. These techniques help to reduce the number of dimensions in our data while obtaining key characteristics that represent the underlying trends and temperature changes.

In order to explore the complex correlations in our dataset, we are now concentrating on implementing convolutional neural network (CNN) architectures. We have specifically included the well-known AlexNet architecture into our pipeline, taking use of its deep convolutional layers to find temporal and geographical correlations in the temperature data. We are also looking forward to the addition of another CNN model that Mehul raval Sir is providing. This model will have the potential to improve analytical and forecasting skills.

We are also learning about its design, parameters, and performance indicators and doing thorough analysis, which makes it easier to choose and improve the model. In parallel, we keep investigating how AlexNet may be used to forecast temperature outcomes using the attributes that have been derived from our dataset.