Major Project

- **Project Name:**

  Artificial Intelligence January Major Project

- **Project Description:**

Problem statement: Create a Deep learning model to predict the different hand signs images.

Context: Sign languages (also known as signed languages) are languages that use manual communication to convey meaning. This can include simultaneously employing hand gestures, movement, orientation of the fingers, arms or body, and facial expressions to convey a speaker's ideas.

Source: https://en.wikipedia.org/wiki/Sign_language

Dataset - https://drive.google.com/drive/folders/1xEQ1qH4FXvPOGNK8YhUP6kQ0YHZRTTLz?usp=sharing

Note - Use np.load() to read .npy files

Details of datasets:

- Image size: 64x64
- Color space: Grayscale
- File format: npy
- Number of classes: 10 (Digits: 0-9)

Steps to consider:

- Normalize images by dividing pixels by 255 (if required)
- Convert labels to categories (if required)
- Reshape images so as to fit them to convolution
- Build a CNN Architecture
- Execute the model for appropriate number of epochs
- Depict loss vs. val_loss on line chart.
- Depict accuracy vs. val_accuracy on line chart.
- Generate predictions on test_data.
- Compute Confusion matrix and classification report.