Title:	Emotion detection using EEG signal analysis and loclal stability analysis of two-stage pray predator modal
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Abstract:	In the first chapter, the electroencephalogram (EEG) signals of 25 individuals were recorded while they watched 12 one-minute-long segments of videos. Each participant rated each video on the basis of factors such as arousal, valence, likeability, and dominance. We have calculated the Power spectral density and spectrogram of all channels in our EEG montage for all 25 subjects. Visual representation of EEG signals can be achieved with spectrograms. Spectrograms depict the intensity of a signal across time in a graphical format. The power spectral density (PSD) feature extraction technique extracts the features based on various frequency transformations that enhance the classification performance. In this research project, the EEG recording from 20 subjects are used to train the CNN model in python on the basis of the level of arousal, valence, likeability, and dominance, and recording from the remaining 5 subjects are used as test data. In our model, we have predicted the level of arousal and valence emotion for our test subjects. In the second chapter, local Stability analysis of a two-stage pray-predator modal involving a Lotka-Voltera type of functional response was studied. It is assumed that the prey grows logistically without predators, and predators decay exponentially without prey species. First, we will see the dynamics of this model using the set of first-order nonlinear differential equations then we will show the existence and stability of all possible equilibrium points.
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