



CSC Seminar

SPEAKER

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TITLE

Stability and Synchronisation of Neural Networks using Impulsive Control

ABSTRACT

In this presentation, I am going to present the results of stability and synchronisation of continuous-time neural networks with time-delays. The motivation behind modelling of the neural networks will be presented. How time-delays are important in modelling of neural networks will be discussed in the presentation. In many application areas, such as secure communication, nonlinear optimization, multi-agent systems, and content addressable memory, stability of the synchronous state as well as stability of equilibrium points of neural networks is necessary to achieve the desired performance. Thus, I will present how *impulsive control* can be used to find stability criteria of neural networks with time-delays. Impulsive control is a type of discontinuous controllers in which the system's dynamics are controlled only at *discrete times* (impulsive sequences) with *impulsive gains*. Precisely, the systems' stability under the impulsive control depends on the existence of impulsive sequences and the values of impulsive gain. Therefore, I will present the results of the concerned problems for large classes of the *impulsive sequences* and the *impulsive gains*. Further, my presentation will be focused on the generalisation of impulsive control, my future research directions.

Tuesday, January 11, 2022 at 2 pm

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