Stability and Control of Neural Networks

Dr. Kreangkri Ratchagit

Department of Mathematics, Maejo University, Chiang Mai, Thailand

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COST: Free

Abstract:

In this talk, the problem of robust finite-time stabilization with guaranteed cost control for a class of delayed neural networks is considered. The time delay is a continuous function belonging to a given interval, but not necessary to be differentiable. We develop a general framework for finite-time stabilization with guaranteed cost control based on the Lyapunov functional method and new generalized Jensen integral inequality. Novel criteria for the existence of guaranteed cost controllers are established in terms of linear matrix inequalities (LMIs). The proposed conditions allow us to design the state feedback controllers which robustly stabilize the closed-loop system in the finite time. A numerical example is given to illustrate the efficiency of the proposed method.

About the speaker:

Kreangkri Ratchagit received his Ph.D. degree in Applied Mathematics from the King's Mungkut University of Thonburi, Bangkok, Thailand in 2008. Currently, he is a lecturer at the Department of Mathematics, Maejo University, Chiang Mai, Thailand. His research interests include stability and stabilization of dynamical systems. Dr Ratchagit is the author of the title: "Asymptotic Stability: of Delay-Difference System of Neural Networks" published by LAP LAMBERT Academic Publishing in April 2012.