Vortragsankündigung

Seminar Regelungssysteme LV 0430L654

Montag 17. November 2014, 16:00 Uhr
Vortragsort: EN 223

Prof. J. Zhang
Department of Automation,
East China University of Science and Technology


The selective ensemble modeling is an effective way to avoid high computational costs of traditional ensemble learning techniques. In this talk, in regression problems the relationship between the ensemble and its component neural networks is analyzed, which reveals that it may be better to ensemble some selected, instead of all, neural networks. A novel selective ensemble modeling approach is developed to effectively select the appropriate neural networks from a set of candidate Elman-type recurrent neural networks for constituting an ensemble. A number of available Elman networks are trained first. Then random weights are assigned to those networks and then tuned by using artificial immune algorithm so that they determine the fitness of the neural networks in constituting an ensemble. In this way, a certain number of neural networks are eventually selected, by comparing their optimized weights, to form the ensemble. The proposed approach was validated on three financial time-series datasets, viz. Dow Jones Industrial Average (DJI), Hang Seng Index (HSI) and GlaxoSmithKline (GSK). The time series prediction results showed that the proposed selective ensemble model outperforms several existing ensembling approaches.