Bee algorithm integrated with system identification technique for modelling dynamic systems

Abstract

System identification has been widely used in modelling dynamic system whereby the input-output data from real system are undergo the model structure selection, parameter estimation and model validation procedure. However, the most complicated part in modelling the dynamic system is selecting the model structure to represent the system. In this project, bee algorithm (BA) is integrated with system identification technique to optimize the model structure selection in modelling the dynamic system. This project describes the procedure and investigates the performance and effectiveness of BA based on a few case studies. The result indicates that the proposed algorithm is able to select the model structure of a system successfully. The validation test carried out demonstrates that BA is capable of producing adequate and parsimonious models effectively.