Abstract

Direct modeling plays a very important role in many engineering applications including telecommunication, power system, image processing, VLSI design, biological processes, control engineering and geophysics applications. In case of control and telecommunication applications, direct modeling is used for channel estimation, parameter estimation and
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forecasting. There are standard algorithms and models which can be conveniently used for effectively identifying the parameters of simple direct and inverse systems. However, in practice we encounter with various complex systems, whose direct models needs to be created for various applications. As an illustration, the system can be non linear, dynamic or both of it. In such situations, creation of direct models is a difficult task. It is evident from the literature survey that, many sincere attempts have been made to create direct model of such complex systems. However, their performance has been observed to be unsatisfactory. Therefore in the present work, a sincere attempt has been made to address all these issues and provide possible satisfactory solutions by using low complexity nonlinear network and population based differential evolution (DE) based learning algorithm.

Reference

- Vavak, F., Fogarty, T. and Jukes, K “A genetic algorithm with variable range of local search for tracking changing environments”. In Proceedings of the 4th Conference on Parallel
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Index Terms

Computer Science
Pattern Recognition

Key words
System identification for dynamic systems FLANN
DE