

ICIEA 2006 Keynote by David Hill

Title: Complex Networks: Design and Control

Speaker: David J.Hill
Federation Fellow
Department of Information Engineering
Research School of Information Sciences and Engineering
Australian National University

Abstract:

Complex networks such large electronic circuits, power grids, and the Internet provide many challenges for engineers. In particular, technology and advanced societies generally have apparently become dependent on large networks to an extent beyond our capability to design and control them to operate securely. The recent spate of collapses in power grids and virus attacks on the Internet illustrate the need for research on modelling, analysis of behaviour, systems theory, planning and control in such networks. Coincidentally, the techniques of analysis and control for complex systems generally are evolving to be network-based, e.g graph theory, neural networks, controller networks. This seminar will describe recent progress in the area of complex networks with emphasis on security issues in design and control.