

INTELLIGENT NETWORK SYSTEMS

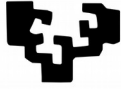
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The impact of optimization in network environments, such as communication networks and transportation networks, on the modern economy and society has been growing steadily over the last few decades. The worldwide division of labor, the connection of distributed centers, and the increased mobility of individuals and devices lead to an increased demand for efficient solutions to solve optimization problems in network systems. With the advent of computer systems, computational intelligence approaches have been developed for systematic design, optimization, and improvement of different network systems.

The aim of the special session is to promote research and reflect the most recent advances of computational intelligence, including evolutionary computation, neural network, fuzzy systems, metaheuristic techniques and other intelligent methods, in the solution of problems in network systems.

Topics

- Communication network systems: telecommunications; mobile, satellite, optical, and voice communications; personal communication systems; switching and routing; transmission systems; communication systems simulation; station and antenna design; information and speech processing; intrusion detection; error control coding; compression and cryptography; propagation and channel modeling, protocol design, etc.
- Transportation and logistics network systems: transportation and supply networks; logistics; supply chain management; freight and passenger services; tracking and tracing; fleet and order management; modeling and traffic management; traffic simulation; individual and public transportation; inventory optimization; routing and scheduling, etc.
- Social network systems: action policies; networking strategies; network and friendship management; identification of interests; advertisement of interests; hierarchical networks; distributed games; behavior analysis; inter-personal communication; group communication, etc.



- Financial and economic network systems: system modeling; modeling payment system, market modeling; forecasting market prices; price tracking; invest strategies; portfolio strategies; measuring systemic importance of the financial system through the network topology, etc.
- General network problems: parallel and distributed systems; networks and graph problems; unconstrained and constrained network design problems; structural and computational complexity; adaptability to environmental variations; robustness to network changes and failures; effectiveness and scalability of performance; location and link design; reliability and failure; corporate network design; location placement; network physical and software architecture; network hardware and software technologies; operations, maintenance, and management; signaling and control; active networks; network services and applications, etc.