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Altri autori (Persone)	AubrunChristophe SimonDaniel <1954-> SongYe-Qiong
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scheduling; 1.4. Feedback-scheduling basics; 1.4.1. Control of the computing resource; 1.4.1.1.Control structure; 1.4.1.2. Sensors and actuators; 1.4.1.3.Control design and implementation; 1.4.2.Examples; 1.4.2.1. Feedback scheduling a web server; 1.4.2.2. Optimal control-based feedback scheduling; 1.4.2.3. Feasibility: feedback-scheduler implementation for robot control
1.5. Fault diagnosis of NCS with network-induced effects1.5.1. Fault diagnosis of NCS with network-induced time delays; 1.5.1.1. Low-pass post-filtering; 1.5.1.2. Structure matrix of network-induced time delay; 1.5.1.3. Robust deadbeat fault filter; 1.5.1.4. Other work; 1.5.2. Fault diagnosis of NCS with packet losses; 1.5.2.1. Deterministic packet losses; 1.5.2.2. Stochastic packet losses; 1.5.3. Fault diagnosis of NCS with limited communication; 1.5.4. Fault-tolerant control of NCS; 1.6. Summary; 1.7. Bibliography; Chapter 2. Computing-aware Control; 2.1. Overview
2.2. Robust control w.r.t. computing and networking-induced latencies2.2.1. Introduction; 2.2.2. What happens when delays appear?; 2.2.2.1. Initial conditions; 2.2.2.2. Infinite dimensional systems; 2.2.3. Delay models; 2.2.4. Stability analysis of TDS using Lyapunov theory; 2.2.4.1. The second method; 2.2.4.2. The Lyapunov-Razumikhin approach; 2.2.4.3. The Lyapunov-Krasovskii approach; 2.2.5. Summary: time-delay systems and networking; 2.3. Weakly hard constraints; 2.3.1. Problem definition; 2.3.2. Notion of accelerable control; 2.3.3. Design of accelerable controllers
3.2.1. Context of the study

Sommario/riassunto

This book describes co-design approaches, and establishes the links between the QoC (Quality of Control) and QoS (Quality of Service) of the network and computing resources. The methods and tools described in this book take into account, at design level, various parameters and properties that must be satisfied by systems controlled through a network. Among the important network properties examined are the QoC, the dependability of the system, and the feasibility of the real-time scheduling of tasks and messages. Correct exploitation of these approaches allows for efficient design, diagnosis, a