Special Issue

Sensor-Based State Estimation and Fault Diagnosis in Automatic Control

Message from the Guest Editor

For most practical control systems, state information is difficult or expensive to be totally measured by sensors. One of the alternatives for solving this problem is trying to obtain the full state estimation by partially measuring state information through a reasonable sensor layout. Additionally, practical control systems are inevitable with uncertainties. Therefore, designing a state observer to estimate the system state in the presence of unknown inputs, which is also called an unknown input observer (UIO), is a challenging issue. On the other hand, state estimation techniques have already played an important role in control engineering designs. In addition to the original application for state feedback controller design purpose, one of the other major applications of state estimation techniques or observers is observer-based actual and sensor fault diagnosis. In fact, observer-based fault diagnosis becomes one of the major methods in model-based fault diagnosis techniques, and investigations on this issue are still a meaningful but challenging open task.

Guest Editor

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