Session 4: Data-driven Modeling and Learning
15:00 – 15:20, 15th, July

Data-driven Soft Sensor Modeling

Chao Shang, Department of Automation, Tsinghua University

In industrial processes, product quality is a central focus because of its close relationship to economic interests. Because measurements of some quality indices are unavailable or costly, the soft sensing technique has been extensively implemented in process control community in past two decades as a real-time and reliable source of product quality estimations. The most-used soft sensors are data-driven ones, which establish prediction models based on the massive data archived. A comprehensive review of present popular data-driven soft sensor models is presented. By analyzing characteristics of process data, we consider semi-supervised learning and dynamic feature extraction as two primary solutions to further improvement of accuracy and applicability of soft sensor models. Several recent progresses in these two directions are introduced and some future works are discussed.