In modern industries such as manufacturing, transportation, and logistics, vast amounts of data are being produced each day. There are urgent needs for developing new optimization, control, modeling, decision, scheduling, and fault diagnosis methods that utilize the vast amounts of data for the increasingly complex and large-scale industrial processes and equipments. Instead of relying primarily on models obtained from physical laws, we must now combine control theory/systems engineering with data mining, pattern recognition, and parallel computer simulation. Recent progress in this direction has resulted in some data-centric technologies, called data-driven methodologies or data-based approaches. Data-based approaches mean that the system optimization, control and modeling are performed directly using the input-output data collected from various real processes. To further promote research activities in this direction, IEEE Transaction on Neural Networks plans to publish a special issue on "data-based optimization, control and modeling" in January 2012.

Scope of the Special Issue

We welcome theoretical papers, application papers, as well as survey papers. Potential topics include but are not limited to:
- Data-based optimization
- Data-based control
- Data-based modeling
- Data-based decision
- Data-based scheduling
- Data-based fault diagnosis
- Data-based adaptive dynamic programming
- Neural network-related data-based approaches
- Fuzzy logic-related data-based approaches
- Hybrid/neuro-fuzzy data-based approaches

Important Dates

Deadline for manuscript submission: January 15, 2011
Accept/reject notice: August 15, 2011
Final manuscript due: September 15, 2011
Intended date of publication: January 2012

Submission Instruction

1. Read Information for Authors http://ieee-cis.org/pubs/tnn/papers/
2. Both Regular (full) and Brief papers can be submitted. All submitted papers for the special issue should be submitted by **January 15, 2011** to the TNN submission webpage for review using Manuscript Central. Please log on to http://mc.manuscriptcentral.com/tnn and follow the directions for submission of your paper. On the first page of the submitted manuscript as well as on the Author's Cover Letter (during the submission procedure), please indicate clearly that the submitted manuscript is submitted to the specific TNN Special Issue on Data-based Optimization, Control and Modeling. Please send an email to "Amir Hussain" <ahu@cs.stir.ac.uk> to notify the guest editor about your submission.

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