Call for Papers
IEEE Signal Processing Society
IEEE Journal of Selected Topics in Signal Processing

Special Issue on Financial Signal Processing and Machine Learning for Electronic Trading

The financial sector has been historically served by experts in finance, quantitative finance, risk management, and electronic trading. However, it still presents a very rich and diverse application area for signal processing methods and technologies. These techniques span across multiple specialties of signal processing field and change dramatically depending on the trading frequency, ranging from covariance modeling to short-term prediction based on market microstructure. Moreover, high performance computing and DSP technologies (FPGA, GPU, others) have already transformed the financial industry by facilitating the implementation of computationally demanding analysis and modeling of high frequency market data and others in real-time. The currently available computational power has brought in once hard to implement machine learning tools for the use of financial applications. The term Big Data Finance is already coined in the field.

This special issue aims to compile relevant research contributions from the disciplines of finance, mathematics, data science and engineering to facilitate scientific cross-fertilization. It will also serve the signal processing community to be exposed to the state of the art in mathematical finance, financial engineering, financial signal processing and electronic trading, and to foster future research in this emerging area.

Topics of interest include but are not limited to

- Big Data Finance
- High Performance DSP (FPGA, GPU, others) for Finance and Electronic Trading
- Machine Learning Methods for Financial Applications and Trading
- Signal Processing Algorithms for Electronic Trading
- Multiresolution Techniques for Multi-frequency Investment and Trading
- High Frequency Trading (HFT) and Order Routing
- Market Microstructure Modeling (price behavior and discovery, limit order book, etc.)
- Theory of Games and Auctions in Financial Models
- Financial News and Social Media Analysis for Intelligent Portfolio Management
- Portfolio Optimization and Management
- Risk Analysis and Models (risk and correlation measures, estimation techniques)

Submission Procedure:

Information for prospective authors can be found at:
http://www.signalprocessingsociety.org/publications/periodicals/jstsp/. Manuscripts should be submitted through Manuscript Central system at http://mc.manuscriptcentral.com/jstsp-ieee. Manuscripts will be peer reviewed according to the IEEE standards.

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Revised manuscript due:	Jan 31, 2016	Second review completed:	March 15, 2016
Final manuscript due:	May 1, 2016		

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