

Paper Submission

Authors are encouraged to submit high-quality, original work that has neither appeared in, nor is under consideration by, other journals.

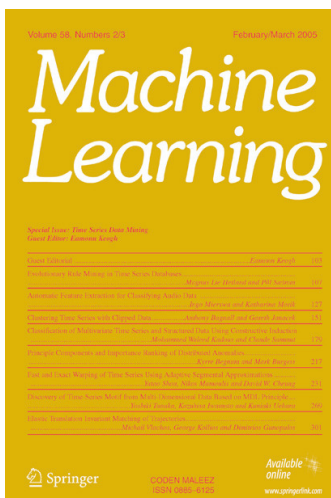
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Manuscripts should be submitted to: <http://MACH.edmgr.com>. This online system offers easy and straightforward log-in and submission procedures, and supports a wide range of submission file formats. When submitting please be sure to choose the manuscript type, "Model Selection and Optimization in ML."

Important Dates

- Paper submission deadline: February 20, 2010
- Notification of acceptance: June 20, 2010
- Final manuscript: September 20, 2010

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Special Issue Call for Papers

Model Selection and Optimization for Machine Learning

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Machine learning, which allows computers to learn and recognize complex patterns from data and make intelligent decisions, largely benefits from optimization techniques. The interplay of machine learning and optimization methods is much like operations research (OR). The mathematical programming/optimization is a subfield of OR. Both machine learning and OR are concerned with modeling of systems related to real-world problems. In machine learning, common practice is to use classical optimization techniques. However, due to massive and large-scale data sets faced in real world problems, optimization becomes a challenging task and traditional approaches cannot keep up with expectations. Accordingly, optimization methods adapted or integrated for machine learning tasks are needed to make ML more feasible for real world data sets.

Another important challenging task is *model selection*. Because of the mathematical structure of the optimization model, there are parameters to be searched off line for the training data. Statistical model selection methods like cross validation can be very time consuming when the size and the dimension of the training data is large. Thus, model selection plays an important role when solving the optimization problem for the feasibility of the algorithm.

With these motivations in mind, in the proposed special issue we would like to summon high-quality research papers that address the above issues. We are especially interested in submissions which can contribute in the following areas:

- Non-Convex Optimization example problems in ML include
 - Problems with sparsity constraints
 - Non-convex quadratic programming
- Feature and subspace selection
- Semidefinite programming relaxations
- Algorithms for non-smooth optimization
- Approximation Algorithms
- Semi-infinite optimization
 - Multiple Kernel Learning
 - Infinite Kernel Learning
- Conic Programming
 - Outlier detection
 - Linear Regression
 - Regularization
- Convex Optimization
 - Multi task learning
- Multi-view Learning
- Hash Kernels
- Model Selection Methods for Machine Learning

Submissions are expected to be of high quality, significant contributions with novel algorithms in machine learning and with applications in detail.



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