



IEEE SMC'19
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SPECIAL SESSION ON
“Non-parallel Support Vector Machine Classifiers”

SPECIAL SESSION CODE
q16xu

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Session area: Cybernetics

Session description

Parallel hyperplane classifiers such as Support Vector Machine (SVM) with its strong theoretical framework found diverse applications in many areas of engineering and science, including artificial intelligence, control engineering, operation research and economy. However, over the past few decades, these conventional methods have faced bottlenecks such as sensitivity to feature and label noise and high time complexity. In this regard, non-parallel classifiers such as Twin Support Vector Machine have drawn considerable attention of research community. These new advancements in non-parallel hyperplane based classification techniques have provide significant benefits including fast learning speed, ease of implementation and ability to capture diversity among classes. However, there still exist some challenges in the applications including high dimensionality, need for large training data and sensitivity to outliers. Although the current research in this field has shown promising results, several research issues need to be explored as follows. There is a need to explore novel methods of training and prediction to improve computational performance along with interpretation, and to explore such techniques for large scale data.

This special session aims to bring together the current research progress (from both academia and industry) on novel non-parallel support vector machine classifiers to address abovementioned challenges. Further, this special session will also provide insight about other viable alternatives for researcher (especially from industry) who extensively need classifiers but lack the expertise in using machine learning techniques effectively.

The main topics of this special session include, but are not limited to, the following:

- Twin Support Vector Machines
- Supervised Learning
- Semi-supervised Learning
- Unsupervised Learning
- Hyper sphere based classifiers
- Large scale classifiers
- Regression with non-parallel classifiers

and their applications including but not limited to

- Time series prediction
- Pattern recognition
- Image Processing
- Computer Vision
- Biometrics and bioinformatics
- Natural language processing
- Big data applications

Keywords

- Machine Learning
- Pattern Recognition
- Image Processing

SUBMISSION

Papers must be submitted electronically for peer review through PaperCept by **March 31, 2019**: <http://controls.papercept.net/conferences/scripts/start.pl>. In PaperCept, click on the **SMC 2019 link "Submit a Contribution to SMC'19" and follow the steps.**

All papers must be written in English and should describe original work. For guidelines, please follow the the SMC website link http://smc2019.org/information_for_authors.html

DEADLINES

March 31, 2019: deadline for paper submission

June 7, 2019: notification of paper acceptance/rejection

July 7, 2019: deadline for final camera-ready papers.