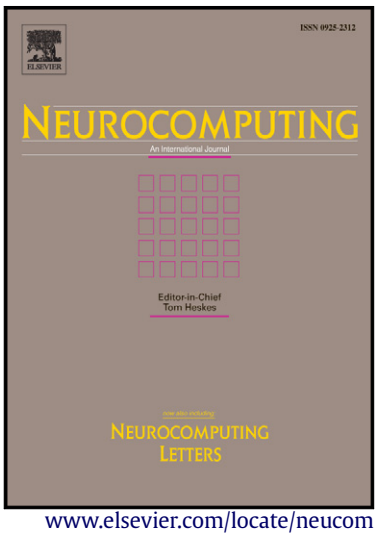

www.elsevier.com/locate/neucom

Advances in artificial neural networks, machine learning, and computational intelligence (ESANN 2013)

Mark J. Embrechts, Fabrice Rossi, Frank-Michael Schleif, John A. Lee

PII: S0925-2312(14)00393-2
DOI: http://dx.doi.org/10.1016/j.neucom.2014.03.002
Reference: NEUCOM14027

To appear in: *Neurocomputing*

Cite this article as: Mark J. Embrechts, Fabrice Rossi, Frank-Michael Schleif, John A. Lee, Advances in artificial neural networks, machine learning, and computational intelligence (ESANN 2013), *Neurocomputing,* http://dx.doi.org/10.1016/j.neucom.2014.03.002

Editorial
Advances in artificial neural networks, machine learning, and computational intelligence (ESANN 2013)

Mark J. Embrechts, Fabrice Rossi, Frank-Michael Schleif, and John A. Lee

This special issue of Neurocomputing presents 14 original articles, which are extended versions of selected papers from the 21st European Symposium on Artificial Neural Networks (ESANN).

ESANN is a single-track conference held annually in Bruges, Belgium, one of the most beautiful medieval towns in Europe, whose atmosphere favours efficient work as well as enjoyable cultural activities (Bruges is a UNESCO World Heritage site).

ESANN is organised by Prof. M. Verleysen from Université catholique de Louvain, Belgium. The conference hosts a series of regular sessions about classification, clustering, recurrent networks, regression and forecasting, dimensionality reduction and feature selection, control and optimisation, etc. In addition, ESANN also welcomed in 2013 a few special sessions focused on more particular topics like processing and analysis of hyperspectral data, machine learning for multimedia applications, developments in kernel design, human activity and motion disorder recognition (towards smarter interactive cognitive environments), and sparsity for interpretation and visualisation in inference models.

The contributions in this special issue show that ESANN covers a broad range of topics in neural computation, machine learning, and neuroscience, from theoretical aspects to state-of-the-art applications and many related themes in signal processing and computational intelligence. About 130 researcher from more than 15 countries participated in the 21th ESANN in April, 2013. They presented 99 contributions, out of 125 submissions, and enjoyed the especially communicative atmosphere in Bruges. Based on the recommendations of special-session organizers, the reviews of the conference papers, and the quality of the presentations made at the conference, about 20 authors were invited to submit an extended version of their conference paper for this special issue of Neurocomputing. All of these articles were thoroughly reviewed once more by at least two independent experts and, out of them, 14 articles presented in this volume were accepted for publication.

In this special issue we can find a multitude of examples relying on neural computation and related techniques in different branches of research.

The article *Neural Learning of Vector Fields for Encoding Stable Dynamical Systems* by A. Lemme, K. Neumann, F.R. Reinhart and J.J. Steil won the