

281	UTBM service communication	Robotics & machine	8 décembre 2014
			intelligence artificielle - IRTEs - laboratoire - recherche

Robotics and Machine Learning  
Monday, December 08, 2014 - 00:01 UTC -0500

**Data on Artificial Intelligence Described by Researchers at UTBM (A graph construction method using LBP self-representativeness for outdoor object...**

Data on Artificial Intelligence Described by Researchers at UTBM (A graph construction method using LBP self-representativeness for outdoor object categorization)

By a News Reporter-Staff News Editor at Robotics & Machine Learning -- Fresh data on Artificial Intelligence are presented in a new report. According to news reporting out of Belfort, France, by VerticalNews editors, research stated, "In this paper, we introduce a new graph construction algorithm that is useful for many semi-supervised learning tasks. Unlike the main stream for graph construction, our proposed data self-representativeness approach simultaneously estimates the graph structure and its edge weights through sample coding."

Our news journalists obtained a quote from the research from UTBM, "Compared with the recent l(1) graph that is based on sparse coding, our proposed objective function has a closed-form solution and thus is more efficient than the iterative schemes deployed for solving the sparse coding problem. Our proposed method

is inspired by the recent coding scheme 'Weighted Regularized Least Square' (WRLS) proposed for improving the Sparse Representation Classifier. This paper has two main contributions. Firstly, we introduce a Two Phase Weighted Regularized Least Square (TPWRLS) graph construction that is based on self-representativeness of data samples. A key element of the proposed method is the second phase of coding that allows data closeness or locality to be naturally incorporated by solving a coding over some automatically selected relevant samples and by reinforcing the individual regularization terms according to the first phase coefficients. Secondly, the obtained data graph is used, in a semi-supervised context, in order to categorize detected objects in driving/urban scenes using Local Binary Patterns as image descriptors."

According to the news editors, the research concluded: "The experiments show that the proposed method can outperform competing methods."

For more information on this research see: A graph construction method

using LBP self-representativeness for outdoor object categorization. *Engineering Applications of Artificial Intelligence*, 2014;36():294-302. *Engineering Applications of Artificial Intelligence* can be contacted at: Pergamon-Elsevier Science Ltd, The Boulevard, Langford Lane, Kidlington, Oxford OX5 1GB, England. (Elsevier - www.elsevier.com; Engineering Applications of Artificial Intelligence - www.elsevier.com/wps/product/cws\_home/975)

Our news journalists report that additional information may be obtained by contacting F. Dornaika, UTBM, IRTEs SET, F-90010 Belfort, France. Additional authors for this research include A. Bosaghzadeh, H. Salmane and Y. Ruichek.

Keywords for this news article include: France, Europe, Belfort, Artificial Intelligence

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PUBLI-C news-20141208-QRABN-021 - Date d'émission : 2014-12-07

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