

A sparse Gaussian process regression model for tourism demand forecasting in Hong Kong

Autores: Wu, Qi^{1,2} hmwuqi@polyu.edu.hk
Law, Rob²
Xu, Xin³

Fuente: Expert Systems with Applications. Apr2012, Vol. 39 Issue 5, p4769-4774. 6p.

Tipo de documento: Article

Descriptores: *GAUSSIAN processes
*REGRESSION analysis
*TOURISM
*DEMAND (Economic theory)
*ECONOMIC forecasting
*MACHINE learning
*SUPPORT vector machines
*COMPUTATIONAL complexity

Términos geográficos: HONG Kong (China)
CHINA

Palabras clave proporcionadas por el autor: Kernel machines
Sparse Gaussian process
Support vector machine
Tourism demand forecasting

NAICS/Códigos del sector: 561591 Convention and Visitors Bureaus
721211 RV (Recreational Vehicle) Parks and Campgrounds
721214 Recreational and Vacation Camps (except Campgrounds)
713990 All Other Amusement and Recreation Industries
721110 Hotels (except Casino Hotels) and Motels
721120 Casino Hotels
721191 Bed-and-Breakfast Inns
721199 All Other Traveler Accommodation

Resumen: Abstract: In recent years, Gaussian process (GP) models have been popularly studied to solve hard machine learning problems. The models are important due to their flexible non-parametric modeling abilities using Mercer kernels and the Bayesian framework for probabilistic inference. In this paper, we propose a sparse GP regression (GPR) model for tourism demand forecasting in Hong Kong. The sparsification procedure of the GPR model not only decreases the computational complexity but also improves the generalization ability. We experiment the proposed model with monthly demand data that are relevant to Hong Kong's tourism industry, and compare the performance of the sparse GPR

model with those of various kernel-based models to show its effectiveness. The proposed sparse GPR model shows that its forecasting capability outperforms those of the ARMA model and the two state-of-the-art SVM models. [Copyright &y& Elsevier]

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Afiliaciones del autor: ¹Key Laboratory of Measurement and Control of CSE (School of Automation, Southeast University), Ministry of Education, Nanjing, Jiangsu 210096, China
²School of Hotel and Tourism Management, Hong Kong Polytechnic University, Hung Horn, Kowloon, Hong Kong
³Institute of Automation, College of Mechatronics and Automation, National University of Defense Technology, Changsha 410073, China

ISSN: 0957-4174

DOI: 10.1016/j.eswa.2011.09.159

Número de acceso: 70388415