

SORS: Principal Component Analysis for Establishing Characteristic Behaviour

Speaker: Dr. Raul Valente Ramírez Velarde, ITESM Campus Monterrey, Mexico

Title: Principal Component Analysis for Establishing Characteristic Behaviour and Machine Learning

Abstract: Principal Component Analysis is a well-known technique for unsupervised machine learning. We use Principal Component Analysis to establish relations between environmental variables and variables for prediction and classification. We also use PCA to establish a first guess for the problem of classification. And we use PCA to establish characteristic behaviors of important variables that contain the highest level of variability.

Short Bio: Raul Ramirez-Velarde finished a Chemical & Industrial Engineering degree in May, 1988 at Instituto Tecnológico y de Estudios Superiores de Monterrey (ITESM), Campus Monterrey, Mexico. He finished a Master Degree on Science with specialty in Computer Science in July 1991. He has been full time professor at ITESM since August de 1991. He reached Associate Professor Level in 2003. He finished a doctorate degree at ITESM in February 2004 in Information Technology with specialty in Multimedia Distributed Systems.

Raul Ramirez has done research in collaborative distributed systems, information technology architecture and infrastructure engineering, computer graphics and animation, and networked multimedia. He has also been consultant to several important firms such as Cemex, Vitro, MacroPro, Photosoft, Cerveceria Cuahtemoc, Elektra, and several agencies of Nuevo Leon provincial government. Also, he is part of the Technical Committee for the development of the Preliminary Results Program for the Provincial Voting Commission (SIPRE, CEE) and of the Technical Committee for the Development of Electronic Vote for the same commission.

He is a member of the National Accreditation Council for Information Technology (CONAIC) and part the directorate board of the National Association of Information Technology Institutions (ANIEI). In January of 1993, he was awarded the first place of the "Award to Educational Innovation 1992".

Currently, Dr. Ramirez is doing research in modelling chaotic systems under uncertainty, modelling high-performance infrastructures such as GRID and Cloud computing, performing multivariable analysis and optimization and scalable algorithms, and modelling network based multimedia services.

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