

Josep Roure Alcobé

Objective

Apply my knowledge in designing efficient new algorithms and machine learning methods to advanced problems in a setting containing both research challenges and projects to be fielded in the real world

Education

PhD. In Artificial intelligence at the Computer Science Department of the Technical University of Catalonia (UPC). Dissertation title: Incremental methods for Bayesian Network Structure Learning. Advisors: Ramon Sangüesa and Ulises Cortés. Committee members: Pedro Larrañaga, Joao Gama, Robert Castelo, Javier Béjar, Miquel Sànchez. Barcelona, July 2004.

Master in Artificial Intelligence at the Computer Science Department of the Technical University of Catalonia (UPC). Barcelona 1994.

MSch in Knowledge Engineering at the Middlesex University, London (UK), 1994.

Licenciatura (five years degree) on Computer Science at the Technical University of Catalonia (UPC). Barcelona, 1993.

Professional Experience

Professor at the University Technical School of Mataró since 1996. The University Technical School of Mataró is an associated school of the Technical University of Catalonia (UPC).

Project Scientist at the Robotics Institute's Auton Lab, Carnegie Mellon University, from August 2006 to September 2007

Post-doctoral position at the Robotics Institute at Carnegie Mellon University, from July 2005 to July 2006, working with Andrew W. Moore and Artur Dubrawski

Part-time associate professor at the University Technical School of Mataró, 1993-1996

Part-time associate professor at the Technical University of Catalonia (UPC), first semester of 1995

Research Projects

“FABIS: USDA's Food and Agriculture Biosurveillance Integration System”

FABIS is a collaborative effort between the Food Safety and Inspection Service (FSIS) and APHIS to produce a comprehensive and coordinated view of program information in order to proactively identify events affecting agriculture and food products. FABIS integrates and analyzes domestic and international surveillance and monitoring data collected from various human and animal health systems.

“BIOSECUR-ID: A system for biometric identification and security”. Spanish Scientific Council, Project FEDER-CICyT TIC-2003-083282-C05-02

The aim of this project is to build a multi-modal biometric database, with face pictures, fingerprints, palm-prints, voice and signatures. It also attempts to develop multi-modal systems for user identification and verification.

“STILUS: Communication Services for Local Urban Intranets”. Spanish Scientific Council, Project CICyT TEL97/0817.

The goal was to develop Internet services in a city of median size (300,000 population) and to spread the use of these tools. As a result, the city of Mataró (Spain) provided some simple services to their citizens such as, electronic boards, web-page hosting, e-mail services, and chats. Few years later, Mataró received an award for the services provided through Internet.

“Building and Integration of Knowledge Bases for Knowledge-Based Systems”. Spanish Scientific Council, Project CICyT TIC96/0878.

The project was to study the use of several unsupervised automatic learning techniques for concept formation in ill-structured domains. From the resulting concepts a set of classification rules was to be generated automatically. Rules were generated for waste water treatment plants.

“VIM: A Virtual Multicomputer for Symbolic Applications”. Nr. ERB4050 PL930186. Human mobility program of the European Union.

It was a network project under the EC's Human Capital and Mobility programme that brought together 15 partners researching in three areas: parallel and distributed systems, compilation for parallel execution and artificial intelligence. The goal was to develop AI applications to run on distributed architectures and across local and wide-area networks.

Awards and Grants Received

Fulbright post-doctoral grant to join the research group led by Andrew W. Moore at Carnegie Mellon University, the Robotics Institute. The grant is for the period that goes from July 2005 to July 2006.

Award to the best scientific paper at the 15th European Conference on Artificial Intelligence (2002) for the paper “An Incremental Algorithm for Tree-Shaped Bayesian Network Learning”

ERASMUS grant to attend the MSch in Knowledge Engineering at the Middlesex University, London. During the first semester of 1993.

Grant for two month stay at the University of Bath (UK) during the summer of 1992. The grant was given by the Spanish Education Council and the British Council: CEAB/CSIC, PIC HB-224

Teaching experience

I have lectured on the following subjects:

- Artificial Intelligence
- Programming
- Discrete Maths
- Applications on Internet
- Data Bases
- Software Engineering
- 3D animation and Virtual Reality

Professional Services

Reviewer of the Catalan government agency for university and research grants (AGAUR: agència de Gestió d'Ajuts Universitaris i de Recerca), since 2006

Local Organization Committee member, International Conference on Machine Learning, ICML-2006

Co-organizer of the Third International Workshop on Knowledge Discovery from Data Streams, KDDS 2006. Workshop in ICML-2006.

Program Committee member, IEEE International Workshop on Mining Evolving and Streaming Data 2006

Program Committee member, European Conference on Machine Learning, ECML/PKDD-2005.

Program Committee member, International Workshop on Knowledge Discovery from Ubiquitous Data Streams, 2007. Workshop in ECML/PKDD.

Program Committee member, International Workshop on Knowledge Discovery in Data Streams, KDDS 2004, 2005, 2006. Workshop in ECML/PKDD.

Program Committee member, International Conference on Advanced Data Mining and Applications, ADMA 2005

Program Committee member, Data Streams Track, ACM Symposium on Applied Computing, SAC 2005, SAC 2007, SAC 2008, SAC 2009

Organization Committee member, Second International Workshop on Non Linear Speech Recognition, NOLISP 2005.

Publications

- Josep Roure, Artur Dubrawski and Jeff Schneider, "Learning Detectors of Events in Multivariate Time Series". AMIA 2008 Annual Symposium.
- J. Roure, A. Dubrawski, J. Schneider, "A Study into Detection of Bio-Events in Multiple Streams of Surveillance Data", NFS Workshop on BioSurveillance Systems and Case Studies. 2007
- M. Faúndez-Zanuy, J. Roure, V. Espinosa-Duro, J.A. Ortega, "An efficient face verification method in a transformed domain". Pattern Recognition Letters 28(7): 854-858. 2007
- J. Roure and A.W. Moore, "Sequential update of ADtrees". International Conference on Machine Learning, ICML-2006
- M. Faundez, L. Janer, J. Roure, F. Bimbot and R. De Mori editors of "Special Issue on Non-Linear and Non-Conventional Speech Processing". Elsevier, 2006
- J. Roure, "Learning Bayesian networks with an approximated MDL score". Advances in Bayesian Networks. Springer Verlag, 2006
- J. Roure and M. Faundez, "Face recognition with small and large size databases". IEEE International Carnahan Conference on Security Technology (ICCST 2005).
- J. Roure, "Incremental methods for Bayesian network structure learning". AI Communications. 18(1): 61-62 (2005)
- J. Roure, "An approximated MDL score for learning Bayesian networks". Second workshop in Probabilistic Graphical Models, (PGM 2004)
- J. Roure, "Incremental Augmented Naive Bayes Classifiers". In the 17th European Conference on Artificial Intelligence (ECAI 2004)
- J. Roure, "Incremental Hill-Climbing Search Applied to Bayesian Network Structure Learning". In the 1st workshop of Knowledge Discovery on Data Streams, (KDDS 2004)
- J. Roure, "An incremental algorithm for tree-shaped Bayesian network learning". In the 15th European Conference on Artificial Intelligence, (ECAI 2002). Obtained the **Best Scientific Paper Award**
- J. Roure, "Incremental Learning of Tree Augmented Naive Bayes Classifiers". In Ibero-American Conference on Artificial Intelligence, (IBERAMIA 2002)
- J. Roure, P. Larrañaga and R. Sangüesa. "An empirical comparison between K-Means, GAs and EDAs in Partitional Clustering". P. Larrañaga and J.A. Lozano, editors. Kluwer Academic Publishers, 2001
- J. Roure, "Incremental Methods for Bayesian Network Learning". Research Report LSI-99-42-R. Computer Science Department at the Technical University of Catalonia. 1999
- L. Talavera and J. Roure. "A buffering strategy to avoid ordering effects in clustering". In European Conference of Machine Learning, (ECML 1998)

- J. Roure and L. Talavera, "*Robust incremental clustering with bad instance orderings: a new strategy*". In Ibero-American Conference on Artificial Intelligence, (IBERAMIA 1998)
- J. Roure, "Study of Methods and Heuristics to Improve the Classification of LINNEO+". Master Thesis. Software Department at the Technical University of Catalonia, 1994
- D. Riaño, J. Roure and J. Cabós, "Concurrent Processing in a Parallel Environment" Research Report. [Ref 92-64]. University of Bath (UK). 1992

Invited Talks

- Stanford Medical Informatics, Stanford University, November 2005.
- Computational Learning Laboratory, Center for the Study of Language & Information, Stanford University, November 2005.