

Curriculum Vitae



NAME:	HUGO JAIR ESCALANTE BALDERAS
TITLE:	PhD. in Computer Science
SNI:	Candidate level
AGE:	30 years old
MARITAL STATUS:	Married (2 children)
WORK ADDRESS:	Luis Enrique Erro # 1, Tonantzintla, Puebla, 72840
COUNTRY:	MEXICO
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INSTITUTION:	Instituto Nacional de Astrofísica, Óptica y Electrónica
DEPARTMENT:	Computational sciences
WEBSITE:	http://ccc.inaoep.mx/~hugojair/
MEMBERSHIPS:	ACM-SIGIR, ACM-MM, ACM-SIGHCI, ACM- SIGKDD, IEEE, Computational Intelligence society, Computer society, International Neural Networks Society, REDTIC-CONACyT, CHALEARN.

RESEARCH INTERESTS

My research interests are on machine learning, with emphasis in supervised classification and feature selection. My research interests also include multimedia information retrieval, text categorization, authorship attribution, and high-level computer vision.

PROFESSIONAL EXPERIENCE

Associate researcher

National Institute of Astrophysics, Optics and Electronics,
Computer Science Department
Puebla, Mexico

January 2012 - now

Visiting researcher

National Institute of Astrophysics, Optics and Electronics,
Computer Science Department
Puebla, Mexico

September –December 2011

Assistant professor

Universidad Autónoma de Nuevo León,
Graduate Program on Systems Engineering
San Nicolás de los Garza, NL, Mexico

August 2010 – December 2011

Postdoctoral researcher

National Institute of Astrophysics, Optics and Electronics,
Computer Science Department
Puebla, Mexico

April-August 2010

ACADEMICS

Ph.D. in Computer Science

National Institute of Astrophysics, Optics and Electronics,
Computer Science Department
Puebla, Mexico

2006- 2010

Master in Computer Science

National Institute of Astrophysics, Optics and Electronics,
Computer Science Department
Puebla, Mexico

2003- 2006

B. S. in Computer Science

Universidad Autónoma de Puebla
Facultad de Ciencias de la Computación
Puebla, Mexico

1999 - 2003

AWARDS

Co-director of CHALEARN: The Challenges in Machine Learning Organization, for the period 2011-2012, there are 9 other directors worldwide. California, USA, December, 2011.

Best student paper award of the 23th International Joint Conference on Neural Networks. Granted by the IEEE for the paper entitled: "*Ensemble Particle Swarm Model Selection*", Barcelona, Spain, July, 2010.

Best 2010 PhD thesis on Artificial Intelligence award, granted by the Mexican Society for Artificial Intelligence at MICAI2010, for the thesis: "*Cohesión Semántica para la Anotación y Recuperación de Imágenes*", Pachuca, Hgo. Mexico, November, 2010.

SNI Fellow candidate level (2011-2013), granted by the National Council for Science and Technology, September, 2010.

3rd place for the best student paper award of the 10th Mexican International Conference on Artificial Intelligence. Granted to Debangana Dey, Thamar Solorio, Manuel Montes and Hugo Jair Escalante by the Mexican Society for Artificial Intelligence at MICAI2011 for the paper entitled: “*Instance Selection in Text Classification using the Silhouette Coefficient*”, Puebla, Mexico, November, 2011.

Scholarships for attending **WCCI2010, MLSS2008, NIPS2006, NIPS2007, IJCNN2007, WCCI2008, MICAI2010.**

PUBLICATIONS

JOURNAL (Sorted by their latest impact factor)

1. Hugo Jair Escalante, Enrique Sucar, Manuel Montes. **Particle Swarm Model Selection.** *Journal of Machine Learning Research*, 10(Feb):405--440, 2009. *Impact factor: 2.682.*
2. G. Th. Papadopoulos, C. Saathoff, H. J. Escalante, V. Mezaris, I. Kompatsiaris, M. G. Strintzis. **A Comparative Study of Object-level Spatial Context Techniques for Semantic Image Analysis.** *Computer Vision and Image Understanding Journal*, Vol. 115(9):1288—1307, 2011. *Impact factor: 2.404.*
3. Hugo Jair Escalante, Michael Grubinger, Carlos Hernandez, Jesus A. Gonzalez, Aurelio Lopez, Manuel Montes, Eduardo Morales, Enrique Sucar, and Luis Villaseñor. **The Segmented and Annotated IAPR-TC12 Benchmark.** *Computer Vision and Image Understanding Journal*, 114(4):419—428, 2010. *Impact factor: 2.404.*
4. Hugo Jair Escalante, Manuel Montes and Enrique Sucar. **An Energy-based Model for Region Labeling.** *Computer Vision and Image Understanding*, Vol. 115(6):787—803, 2011. *Impact factor: 2.404.*
5. Hugo Jair Escalante, Manuel Montes and Enrique Sucar. **Multimodal Document Indexing based on Semantic Cohesion.** *Information Retrieval Journal*, Accepted, in press, 2011. *Impact factor 1.308.*
6. Igor Litvinchev, Fernando Lopez, Hugo Jair Escalante, Miguel Mata. **A MILP Bi-objective Model for Static Portfolio Selection of R&D Projects with Synergies.** *Journal of Computer and Systems Sciences International*, Vol. 50(6):942--952. ISSN: 1064-2307, 2011. *Impact factor: 0.191.*
7. Hugo Jair Escalante, Manuel Montes and Enrique Sucar. **Summary of PhD Thesis: Semantic Cohesion for Image Annotation and Retrieval.** *Computacion y Sistemas*, Vol. 16(1), 2012.

MAGAZINE PAPERS

8. Hugo Jair Escalante, Eduardo Morales. **Ver para aprender y aprender a ver: sinergias entre aprendizaje automático y visión computacional.** *Komputer Sapiens*, Vol. 3(2):15--20, 2011.

EDITORIAL

9. L. Enrique Sucar and Hugo Jair Escalante (Eds.): **Proceedings of the 2010 Automatic Image Annotation and Retrieval Workshop (AIAR 2010).** CEUR-Workshop Proceedings, Vol. 719, 2011 (ISSN 1613-0073), <http://CEUR-WS.org/Vol-719/>.

BOOK CHAPTERS

10. Hugo Jair Escalante, Enrique Sucar, Manuel Montes. **Particle Swarm Model Selection.** Book Chapter in Isabelle Guyon, Gavin Cawley, Gideon Dror, and Amir Saffari (Editors). *Hands-on Pattern Recognition, Challenges in Machine Learning Series, Vol 1*, pp. 309—344, chapter 14, Microtome Publishing, Brookline, USA, ISBN 978-0-9719777-1-6, 2011.

INTERNATIONAL CONFERENCES (REFERRED)

11. Hugo Jair Escalante, Tamar Solorio, Manuel Montes. **Weighted Profile Intersection Measure for Profile-based Authorship Attribution.** *I. Batyrshin and G. Sidorov (Eds.): MICAI 2011: Proceedings of the Mexican International Conference on Artificial Intelligence, Part I, LNAI 7094*, pp. 232--243. Springer, Heidelberg, 2011.
12. Debangana Dey, Tamar Solorio, Manuel Montes, Hugo Jair Escalante. **Instance Selection based on the Silhouette Coefficient Measure for Text Classification.** *In I. Batyrshin and G. Sidorov (Eds.): MICAI 2011: Proceedings of the Mexican International Conference on Artificial Intelligence, Part I, LNAI 7094*, pp. 232--243. Springer, Heidelberg, 2011. **[received the 3rd place for the best student paper award].**
13. Hugo Jair Escalante, Tamar Solorio, Manuel Montes. **Local Histograms of Character n-grams for Authorship Attribution.** *Proceedings of the 49th Annual Meeting of the Association for Computational Linguistics, Oral-long paper*, pp. 288—298, Portland, Oregon, USA, June 19--24, 2011. Acceptance rate 26%, **[top ranked conference on Natural Language Processing, source: [arnetminer](http://arxiv.org/abs/1106.1814)].**
14. Hugo Jair Escalante, M. Montes and E. Sucar. **Ensemble Particle Swarm Model Selection.** *Proceedings of the International Joint Conference on Neural Networks 2010*, pp. 1814--1821, July, IEEE, Barcelona, Spain, 2010 **[received the best student paper award].**

15. Hugo Jair Escalante, Manuel Montes, and Luis Villaseñor. **Particle Swarm Model Selection for Authorship Verification.** In *CIARP'09: Proceedings of the 14th Iberoamerican Congress on Pattern Recognition*, LNCS 5856, pp. 563–570, Springer, November 15-18, Guadalajara, Mexico, 2009.
16. Hugo Jair Escalante, Jesus A. Gonzalez, Carlos Hernandez, Aurelio Lopez, Manuel Montes, Eduardo Morales, Enrique Sucar, and Luis Villaseñor. **Annotation-Based Expansion and Late Fusion of Mixed Methods for Multimedia Image Retrieval.** In C. Peters et al. editors, *Evaluating Systems for Multilingual and Multimodal Information Access*, LNCS 5706, pp. 669--676, Springer-Verlag Berlin, Heidelberg, 2009.
17. Hugo Jair Escalante, Carlos Hernandez, Enrique Sucar, Manuel Montes. **Late Fusion of Heterogeneous Methods for Multimedia Image Retrieval.** In *MIR'08: Proceedings of the 2008 ACM Multimedia Information Retrieval Conference*, pp. 172--179, October 30--31, 2008, Vancouver, British Columbia, Canada.
18. Hugo Jair Escalante, Carlos Hernandez, Aurelio Lopez, Heidy Marin, Manuel Montes, Eduardo Morales, Enrique Sucar, and Luis Villaseñor. **Towards Annotation-Based Query and Document Expansion for Image Retrieval.** In C. Peters et al. (Eds.): *Advances in Multilingual and Multimodal Information Retrieval Conference, CLEF 2007*, LNCS 5152, pp. 546–553, 2008. Springer-Verlag Berlin Heidelberg 2008.
19. Hugo Jair Escalante, Manuel Montes, L. Enrique Sucar. **Improving Automatic Image Annotation Based on Word Co-occurrence.** In N. Boujemaa, M. Detyniecki, and A. Nurnberger (Eds.): *AMR 2007*, LNCS 4918, pp. 57–70, 2008. Springer-Verlag Berlin Heidelberg 2008.
20. Thomas Deselaers, Allan Hanbury, Ville Viitaniemi, J.D R. Farquhar, Mátyás Brendel, Bálint Daróczy, Hugo Jair Escalante Balderas, Theo Gevers, Carlos Arturo Hernández Gracidas, Steven C. H. Hoi, Jorma Laaksonen, Mingjing Li, Heidy Marisol Marin Castro, Hermann Ney, Xiaoguang Rui, Nicu Sebe, Julian Stöttinger, Lei Wu. **Overview of the ImageCLEF 2007 Object Retrieval Task.** In C. Peters et al. (Eds.): *Advances in Multilingual and Multimodal Information Retrieval Conference, CLEF 2007*, LNCS 5152, pp. 445—472, Springer-Verlag Berlin Heidelberg, 2008.
21. Hugo Jair Escalante, and Manuel Montes and L. Enrique Sucar. **Word Co-occurrence and Markov Random Fields for Improving Automatic Image Annotation.** *Proceedings of the 18th British Machine Vision Conference. Vol. 2*, pp. 600-609, Warwick, UK, 2007.
22. Hugo Jair Escalante, Manuel Montes y Gomez, and Luis Enrique Sucar. **PSMS for Neural Networks on the IJCNN 2007 Agnostic vs Prior Knowledge Challenge.** In *IJCNN'07: IEEE-INNS Proceedings of 20th International Joint Conference on Neural Networks*, pp. 1191--1197. ISBN: 1-4244-1380-X. ISSN: 1098-7576. Orlando, Florida, USA, August 12-17, 2007.

23. Hugo Jair Escalante. **Cleaning Training Datasets with Noise-Aware Algorithms.** In Sergio Rajsbaum, editor, *Proceedings of the Seventh Mexican International Conference on Computer Science (ENC 2006)*, pp. 151–158, San Luis Potosi, Mexico, September 2006, IEEE Computer Society.
24. Hugo Jair Escalante and Olac Fuentes, **Analysis of Galactic Spectra using Noise-Aware Learning Algorithms.** G. Sutcliffe and R. Goebel Editors. *Proceedings of the 19th International FLAIRS Conference (FLAIRS-19)*, pp. 550-555. Melbourne Beach, Florida, USA, May 2006,

WORKSHOP PAPERS AND NATIONAL CONFERENCES

25. Hugo Jair Escalante. **EPSMS and the Document Occurrence Representation for Authorship Identification - Notebook for PAN at CLEF 2011.** *CLEF (Notebook Papers/Labs/Workshop)*, Amsterdam, Netherlands, 2011
26. Brenda Aide Peña Cantú, Roger Z. Ríos Mercado, Hugo Jair Escalante. **Comparación de métricas en sistemas territoriales.** In *Proceedings of the VII FIME Conference on Industrial and Systems Engineering*, pp. 1-10. San Nicolas de los Garza, Mexico, September 2011 (Spanish).
27. Hugo Jair Escalante, J. Antonio Gonzalez-Pliego, Ruben Peralta. **Interactive Construction of Visual Concepts for Image Annotation.** *Proceedings of the 2010 Automatic Image Annotation and Retrieval Workshop, AIAR2010, Puebla, October, 2010*, pp. 47—57, *CEUR-WS Proceedings Vol. 719*, 2011.
28. Gerardo Rodmar Conde Márquez, Hugo Jair Escalante, Luis Enrique Sucar Succar and Abraham Sánchez López. **Simplified Quadtree Image Segmentation for Image Annotation.** *Proceedings of the 2010 Automatic Image Annotation and Retrieval Workshop, AIAR2010, Puebla, October, 2010*, pp. 24—34, *CEUR-WS Proceedings Vol. 719*, 2011.
29. Hugo Jair Escalante, Jesus A. Gonzalez, Carlos Hernandez, Aurelio Lopez, Manuel Montes, Eduardo Morales, Elias Ruiz, Enrique Sucar, and Luis Villaseñor. **TIA-INAOE's Participation to ImageCLEF2009.** In *Working Notes of the CLEF 2009 Workshop, Corfu, Greece, September 30 - October 3, 2009*.
30. Hugo Jair Escalante, Manuel Montes and Enrique Sucar. **On the SAIAPR TC-12 Benchmark.** *THESEUS'09: Proceedings of the 2009 Theseus/ImageCLEF Workshop*, pp. 44—51, Corfu Greece, September 29, 2009.
31. Hugo Jair Escalante. **Particle Swarm Optimization and Meta-Ensembles for the AusDM2009 Analytic Challenge.** Report of participation at the AusDM2009 Analytic challenge, Available form <http://www.tiberius.biz/ausdm09/>.

32. Hugo Jair Escalante, Manuel Montes and Enrique Sucar. **On Multimedia Retrieval Baselines.** In *PI'09: Proceedings of the VI CIMAT Workshop on Image Processing, Guanajuato, Mexico, August 20--21, 2009.*
33. Hugo Jair Escalante, Manuel Montes and Enrique Sucar. **An Energy-based Model for Feature Selection.** Presented at the *Workshop on Causality Challenge in WCCI08, Hong-Kong, China, June 3-4, 2008.*
34. Hugo Jair Escalante, Jesus A. Gonzalez, Carlos Hernandez, Aurelio Lopez, Manuel Montes, Eduardo Morales, Enrique Sucar, and Luis Villaseñor. **TIA-INAOE Participation at ImageCLEF2008.** In *Working Notes of the CLEF 2008 Workshop, 17-19 September 2008, Aarhus, Denmark.*
35. Hugo Jair Escalante, Enrique Sucar, Manuel Montes. **Particle Swarm Optimization for Classifier Selection.** *Proceedings of the 9no. Encuentro de Investigación, INAOE, Puebla, Mexico, November, 4-5, 2008.*
36. Isabelle Guyon, Amir Saffari, Hugo Jair Escalante, Gokan Bakir, and Gavin Cawley, **CLOP: a Matlab Learning Object Package.** In *NIPS 2007 Demonstrations, Vancouver, British Columbia, Canada 2007.*
37. Hugo Jair Escalante, Michael Grubinger, Manuel Montes and Enrique Sucar. **Towards a Region-level Automatic Image Annotation Benchmark,** In *proceedings of the 3rd MUSCLE Workshop on Image and Video Retrieval Evaluation, pp. 64--73, Budapest, Hungary, September 2007.*
38. Hugo Jair Escalante, Manuel Montes and Enrique Sucar. **Multimedia Information Retrieval based on Semantic Cohesion.** *Doctoral consortium, in proceedings of the Mexican International Conference on Computer Science (ENC 2007), Morelia Mich. México, September 2007.*
39. Hugo Jair Escalante, Carlos Hernandez, Aurelio Lopez, Heidi Marin, Manuel Montes, Eduardo Morales, Enrique Sucar, and Luis Villaseñor. **TIA-INAOE's Participation at ImageCLEF 2007.** In *Alessandro Nardi and Carol Peters editors. Working Notes of the CLEF 2007 Workshop, 19-21 September, Budapest Hungary, 2007.*
40. Hugo Jair Escalante. **Results on the model selection game: Towards Particle Swarm Model Selection.** In *NIPS2006 Multi-level Inference Workshop and Model Selection Game, Whistler, Vancouver, BC. Canada, December 2006*
41. Hugo Jair Escalante, **Kernel Methods for Anomaly Detection and Noise Elimination,** In *Advances in Computer Science and engineering, Vol.19, pp. 69-80, International Conference on Computing (CORE 2006), Editorial IPN, Mexico City Mexico.*
42. Hugo Jair Escalante and Olac Fuentes, **Noise-Aware Algorithms for Analysis of Galactic Spectra.** In *Advances in Computer Science and engineering, Vol.19, pp.*

81-92, *7th International Conference on Computing (CORE 2006)*, Editorial IPN, Mexico City Mexico.

43. Hugo Jair Escalante. **A Comparison of Outlier Detection Algorithms for Machine Learning.** *In Proceedings of the 2005 CIC-IPN Congress, Mexico, D.F., 2005.*
44. Hugo Jair Escalante and Olac Fuentes. **Automated Detection of Anomalous Data in Spectral Analysis, (Poster session).** *In 28th International School for Young Astronomers, INAOE, Puebla, Puebla, August 2005.*
45. Hugo Jair Escalante and Olac Fuentes. **Noise Elimination with a Re-Sampling Algorithm.** *In proceedings of First Iberoamerican Workshop on Machine Learning for Scientific Data Analysis, November 2004, pp.307-316, Puebla, Mexico.*
46. Hugo Jair Escalante and Olac Fuentes. **Noise Elimination with a Re-Sampling Algorithm.** *In proceedings of the Simposium Internacional en Tecnologías Inteligentes 2004. Reyes García C.A. (ed). Instituto Tecnológico de Apizaco. ISBN 970-93424-1-X.*

TECHNICAL REPORTS

47. Jonás Velasco, Mario A. Saucedo, Hugo Jair Escalante, Karlo Mendoza, Cesar Emilio Villareal, Oscar Chacón, Adrian Rodríguez, Arturo Berrones. **An Estimation of Distribution Algorithm with Adaptive Gibbs Sampling for Unconstrained Global Optimization.** Technical Report PISIS-2011-11, Graduate Program in Systems Engineering, UANL, San Nicolás de los Garza, México, August, 2011
48. Hugo Jair Escalante and Roger Z. Rios Mercado. **An Improved GRASP with Path Relinking for the Commercial Territory Design Problem.** Technical Report PISIS-2011-10, Graduate Program in Systems Engineering, UANL, San Nicolás de los Garza, México, July, 2011
49. Igor Litvinchev, Fernando Lopez, Hugo Jair Escalante, Miguel Mata, and Gilberto Tenorio. **A MILP Bi-objective Model for Static Portfolio Selection of R&D Projects with Synergies.** *Technical Report PISIS-2011-02, Graduate Program in Systems Engineering, UANL, San Nicolás de los Garza, México, 28 January 2011*
50. Hugo Jair Escalante, Manuel Montes and Enrique Sucar. **Summary of PhD Thesis: Semantic Cohesion for Image Annotation and Retrieval.** *Technical Report INAOE CCC-10-004, May, 2010.*
51. Hugo Jair Escalante, Carlos Hernández-Gracidas, Jesús A. González, Aurelio López, Manuel Montes, Eduardo Morales, Enrique Sucar, Luis Villaseñor. **Segmenting and annotating the IAPR-TC12 Benchmark.** *Technical Report INAOE CCC-08-005, November 1, 2008.*

INVITED TALKS

1. **Atribución de autoría empleando histogramas locales de N-gramas de caracteres.** *8avo. Taller de Tecnologías del Lenguaje Humano, held in conjunction with MICAI 2011, Puebla, Mexico, November 28, 2011.*
2. **Particle Swarm Model Selection: Applications and Extensions.** *Department Seminar at the Computer and Information Sciences Department of the University of Birmingham at Alabama, June 17, 2011.*
3. **Particle Swarm Model Selection and Multimodal Image Retrieval.** *Research Seminar, Computer Science Department, CICESE, Ensenada, BC, Mexico, May 17, 2010.*
4. **Particle Swarm Optimization for Model Selection and Feature Selection.** *Research Seminar PISIS research group, Universidad Autonoma de Nuevo Leon, San Nicolas de los Garza, NL, Mexico, November 26, 2009.*
5. **Introduction to Machine Learning and Pattern Recognition.** *Research Seminar PISIS research group, Universidad Autonoma de Nuevo León, San Nicolás de los Garza, NL, Mexico, November 27, 2009.*
6. **Particle Swarm Model Selection.** *10th Machine Learning Summer School, Ille de Re, France, September 12, 2008.*

ACADEMIC SERVICE

- Co-director of CHALEARN: The Challenges in Machine Learning Organization, for the period 2011-2012, there are 9 other directors worldwide.
- Co-chair of the 1st Automatic Image Annotation and Retrieval Workshop, AIAR2010, Puebla, Mexico, October 6-8, 2010.
- Member of the program committee of NaBIC2011, IJCNN2011, IJCNN2012, ISM2011, WAIL-ECAI2012
- Invited reviewer for:
 - JMLR: Journal of Machine Learning Research (5)
 - Neural networks Journal (1)
 - EJOR: European Journal on Operations Research (2)
 - JMLR: Special Issue on Model Selection (1)
 - Machine Learning Journal (1)
 - Machine Learning Journal: Special Issue on Swarm Intelligence (1)
 - IJA: International Journal of Approximate Reasoning (2)
 - JMLR proceedings: Causality Challenge I (2)
 - JMLR proceedings: Causality Challenge II (2)
 - JMLR proceedings: Active Learning Challenge I (1)
 - Computer Vision and Image Understanding (1)
 - IEEE Intelligent Transportatino Systems Transactions and Magazine (1)

- o Books from CRC press.
- o Book: Hands on Pattern Recognition, edited by Isabelle Guyon et al.
- o Computación y Sistemas (1)
- o NaBIC 2011 (3)
- o ACL-HTL 2011 (6)
- o MCPR2011 (2)
- o LaWEB2007 (1)
- o IJCNN2008 (1), IJCNN2010 (3), IJCNN2011 (3), IJCNN2012
- o NIPS2008 Workshop on Causality (1)
- o CIARP2009 (1), CIARP2008 (1)
- o CORE2009 (1), CORE2008 (1)
- o MICAI2007 (1)
- o IBERAMIA2004 (1)
- o ISM2011 (3)
- o MAEB (1)

PARTICIPATION IN INTERNATIONAL COMPETITIONS

NIPS'2006: Model Selection Game (2nd Place)
 IJCNN'2007: Agnostic Learning vs Prior Knowledge Challenge (Top 10)
 WCCI'2008: Causal Feature Selection Challenge (Top 10)
 AUSDM'2009: Challenge on multiple evidence combination (Top 10)
 KAGGLE: VIH' Prediction challenge: (Top 10)
 The Ford Classification challenge
 ImageCLEF2007: Photographic image retrieval track and Object retrieval track (TIA research group participation)
 ImageCLEF2008: Photographic image retrieval track (TIA research group participation)
 ImageCLEF2009: Photographic image retrieval track and Large Scale Image Annotation track (TIA research group participation)
 PAN-11: PAN 2011 Lab. Uncovering Plagiarism, Authorship, and Social Software Misuse 2011. Authorship identification track (Top-10).

RELEVANT COURSES

10th Machine Learning Summer School. *Ile de Re, France, September, 2008. (Teaching assistant for Isabelle Guyon in [Feature and Model Selection Course](#)).*

Business Foundations for Scientists and Engineers, *Given by Eller College of management, University of Arizona, INAOE, May, 2008.*

28th International School for Young Astronomers, *Organized by the International Astronomical Union, INAOE, July-August 2005.*

COURSES TOUGHT

Research seminar I, INAOE, spring 2012
Text mining, INAOE, spring 2012
Introduction to machine learning. Graduate course, UANL, autumn, 2011
A brief introduction to machine learning. Scientific summer program PISIS-UANL, 2011
Inferential statistics, undergraduate course UANL, 2010 (2 - courses), 2011 (4 - courses)
Feature and model selection course at MLSS08, graduate course (assistant)
Discrete mathematics, 2007, graduate course, INAOE (assistant)
Discrete mathematics, 2009, graduate course, INAOE (assistant)

THESIS

Semantic Cohesion for Image Annotation and Retrieval

PhD thesis, INAOE, 2006-2010, Supervisors: Enrique Sucar and Manuel Montes

Kernel Based Noise-Aware Machine Learning Algorithms

Master thesis, INAOE, 2003-2005, Supervisor: Olac Fuentes

Implementación de un sistema de almacenamiento, análisis y administración de datos obtenidos por sistemas telemétricos inalámbricos,

B.S. thesis, BUAP, 2003, Supervisors: Arturo Fernández Téllez and Pedro Bello.

STUDENTS' SUPERVISION

Supervised master degree thesis

1. **Karlo Mario Mendoza.** Graduate Program on Systems Engineering, UANL, N.L., Mexico. (Expected graduation spring - 2012)
2. **Juan Manuel Cabrera.** (Co-supervised with [Dr. Manuel Montes y Gomez](#)) Computer Science Department, INAOE, Puebla, Mexico. (Expected graduation autumn-2012)

Scientific summer internships (undergraduate students)

1. **Brenda Aide Pena Cantú.** (FIME-UANL) PROVERICYT Program. Graphical User Interface for the visualization of commercial territory designs. (June 20 -- July 22, 2011).
2. **Katia Anaheim Guevara Espinosa.** (Instituto Tecnológico de Cd. Mante) Comparison of machine learning algorithms for fault detection in bearings. (June 20 -- August 22, 2011)

Committee member / external advisor

1. **Perla Cecilia Hernandez Lara (MS)** (Supervised by Dr. Oscar Chacón, UANL), Facultad de Ingeniería Mecánica y Eléctrica, Universidad Autónoma de Nuevo León. September 22, 2011.
2. **Brenda Aide Pena Cantú (BS).** (Supervised by [Dr. Roger Ríos-Mercado](#), UANL), Facultad de Ingeniería Mecánica y Eléctrica, Universidad Autónoma de Nuevo León, November 18, 2011.