

Curriculum Vitae

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Education

Ph. D., Division of Informatics, Faculty of Science and Engineering, University of Edinburgh. (Sept. 1995 - July. 2001).

Bsc. Electronics Engineering, Instituto Tecnológico de Monterrey, Campus Estado de México (ITESM-CEM), México (Aug. 1988 - Dic. 1992).

Work Experience

06/2003 – Actually	Faculty of Mathematics, Autonomous University of Yucatan. Computer Science Lecturer and researcher.
05/2001 – 04/2003	Computer Science Department, IIMAS National Autonomous University of Mexico (UNAM) Associated Researcher
02/2000 – 08/2000	Informatics Division – University of Edinburgh. Human Communication Research Centre. Research Assitant.

Statement of Research Interests

My current research interests are in the fields of computer vision and parallel computation. In particular I am interested in solving problems in 3D vision, which are computationally expensive, and the development of methodologies for their implementation in parallel computers. In the last 5 years I have been involved developing new methodologies for the analysis of retinal images, visual servoing and parallel methods for 3D reconstruction.

Publications

Journals

Ricardo Legarda-Saenz, Carlos Brito-Loeza, Mariano rivera, Arturo Espinosa-Romero, "Variational method for integrating radial gradient field", *Optics and Lasers in Engineering*. Vol. 63, pp. 53-57. (2014)

M. Elena Martínez-Pérez, Arturo Espinosa-Romero, "Three-Dimensional Reconstruction of Blood Vessels Extracted From Retinal Fundus Images", *Optics Express*, Vol. 20(10), pp. 11451-11465. (2012)

Ricardo Legarda-Saenz, Arturo Espinosa-Romero, "Wavefront Reconstruction using Multiple Directional Derivatives and Fourier Transform", *Optical Engineering* (2011)

Arturo Espinosa-Romero, Ricardo Legarda-Saenz, "GPU based Real-time Quadrature Transform Method for 3D Surface Measurement and Visualisation", *Optics Express*, Vol. 19(13) pp. 12125-12130. (2011)

Ricardo Legarda-Saenz, Ramón Rodríguez-Vera, y Arturo Espinosa-Romero, "Dynamic 3-D shape measurement method based on quadrature transform", *Optics Express* Vol. 18, Iss. 3, pp. 2639–2645 (2010)

Perez, Ricardo R., Arteaga Marco A., Kelly, R., y Espinosa A., "On output regulation of direct visual servoing via velocity fields". *International Journal of Control*. Volume 82, Issue 4, April 2009, pages 679 - 688.

Aguilar, W., Frauel, Y., Escolano, F., Martínez-Pérez, M.E., Espinosa-Romero, A., Lozano, M.A. "A robust Graph Transformation Matching for non-rigid registration". *Image and Vision Computing*, Volume 27, Issue 7, (June 2009) 897–910.

E.C Dean-León, V. Parra-Vega, y A. Espinosa-Romero. "Visual Servoing for Constrained Planar Robots Subject to Complex Friction". *IEEE/ASME–Transactions on Mechatronics*, Volume 11 No. 4, August 2006, pp. 389-400.

Conferences

Javier Aldana-luit, M. Elena Martínez-Pérez, Arturo Espinosa-Romero, Rufino Diaz-Urbe, "Minimizing camera-eye optical aberrations during 3D reconstruction of retinal structures", *Proc. Of SPIE*, Vol. 7723, pp. 77231F-77231F-10

Marco A. Arteaga, Maximiliano Bueno-López y Arturo Espinosa, "A Simple Approach for 2D Visual Servoing", *Control Applications, (CCA) & Intelligent Control, (ISIC)*, 2009 IEEE, pp: 1557-1562, 8-10 July 2009. DOI:10.1109/CCA.2009.5280965

Wendy Aguilar, M. Elena Martínez-Pérez, Yann Frauel, Francisco Escolano, Miguel Angel Lozano, and Arturo Espinosa-Romero, "Graph-Based Methods for Retinal Mosaicing and Vascular Characterization", F. Escolano and M. Vento (Eds.): *GbRPR 2007*, LNCS 4538, pp. 25-36, 2007, ISSN 0302-9743

E.C Dean-León, V. Parra-Vega, y A. Espinosa-Romero. "Global Uncalibrated Visual Servoing for Constrained Robots Working on an Uncalibrated Environments". *IEEE/RSJ International Conference on Intelligent Robot and Systems*, 2006, Oct. 2006, pp. 3809- 3816, ISBN: 1-4244-0259-X

Arturo Espinosa-Romero M. Elena Martínez-Pérez, "Optical 3D Reconstruction of Retinal Blood Vessels From a Sequence of Views", *Proceedings of the SPIE*, 2005, vol. 5776, pp. 605-612

M. Elena Martínez-Pérez, Arturo Espinosa-Romero, "3D Reconstruction of Retinal Blood Vessels From Two Views", *Proceedings of the 4th Indian Conference on Computer Vision, Graphics and Image Processing*, 2004. pp. 258-263

J. R. Atoche Enseñat, L. A. Muñoz, A. Espinosa, Á. Sebasta C., "Towards the automatic pose computation via registration: new results on computing edges using FPGA's", *Proceedings of the SPIE*, 2005, vol. 5776, pp. 657-664

E.C. Dean-León, L.G. García-Valdovinos, V. Parra-Vega, A. Espinosa-Romero, "Visual Servoing for Constrained Robots: A New Complete Theoretical Framework and its Experimental Validation", 2005 *IEEE/ASME International Conference on Advanced Intelligent Mechatronics*, 24 - 28 July 2005, Monterey, California, USA

E.C. Dean Leon, H. Sira Ramirez, V. Parra Vega, A. Espinosa Romero, "Algebraic On Line Identifier of Parameters for Visual Servoing on robot Manipulators". *International Symposium on Robotics and Automation (ISRA 2002)* pp. 435–442

J.D. Fierro Rojas, V. Parra Vega, A. Espinosa Romero, "Dynamic uncalibrated second order sliding mode

visual tracking in finite time for uncertain planar manipulator". International Symposium on Robotics and Automation (ISRA 2002) pp. 443–448

Christian Theobalt, Johan Bos, Tim Chapman, Arturo Espinosa-Romero, Mark Fraser, Gillian Hayes, Ewan Klein, Tetsushi Oka, Richard Reeve. "Talking to Godot – Dialogue with a Mobile Robot". Proceedings of the IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS 2002), pp.1338–1343

Berzunza Richard G., Espinosa Romero A., Rojas Solís, M., Muñoz Ubando L. A., Localización y Seguimiento de la Mano Humana usando Visión Por Computadora, VII Congreso Mexicano de Robótica 2005, pp. 53-60. F. Camas Tec, G. Parra Escamilla, A. Raymundo Avilés, A. Espinosa Romero, L.A. Muñoz Ubando, Implementación en Paralelo del algoritmo de Wunsch con seguimiento de Imágenes, VII Congreso Mexicano de Robótica 2005, pp. 68-72.

S.E. Venegas, Andraca, L. A. Muñoz Ubando and A. Espinosa Romero, Quantum Search for Dexterous Manipulation Planning, VII Congreso Mexicano de Robótica 2005, pp. 93-96.

M. Rojas Solís, A. Espinosa Romero, J. R. Atoche Enseñat, L. A. Muñoz Ubando, Introducción a la Inicialización de Pose en Visión Computacional, Memorias del V Congreso Mexicano de Robótica, pp. 159–164. 2004.

Anabel Martín González, Arturo Espinosa Romero, Método de Alineamiento de Imágenes de Cortes Histológicos Elásticos Deformados del Núcleo Pedúnculo Pontino del Cerebro de Ratas", XVII congreso nacional Y III congreso internacional de informática y computación de la ANIEI, 2004

Arturo Espinosa Romero. Depth Estimation for Mobile Robots. Workshop in Robotics and AI, Mexican International Conference in Artificial Intelligence (MICAI 2002) pp. 295–303

J.D. Fierro Rojas, V. Parra Vega, A. Espinosa-Romero. 2D Sliding Mode Visual Servoing for Uncertain Robots Manipulators with an Uncalibrated Camera. Workshop in Robotics and AI, Mexican International Conference in Artificial Intelligence (MICAI 2002) pp. 285–293

Implementación de la transformada de Wavelets para el análisis de señales en neuro-computación. Memorias del IV Congreso Internacional de Ingeniería Eléctrica, Electrónica y Computación (CONIELECOM 1993) Arturo Espinosa Romero, Jesus Figueroa Nazuno.

Arturo Espinosa Romero, Esther Vargas Medina. Análisis de señales aperiódicas por métodos gramaticales y caóticos. Memorias del V Congreso Internacional de Ingeniería Eléctrica, Electrónica y Computación (CONIELECOM 1994).

La Transformada Waveletes y el Análisis de Señales Complejas en Forma Automática. Symposium Internacional de Computación, IPN–México. Arturo Espinosa Romero, Dr. Jesus Figueroa Nazuno.