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DOMICILIO

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CAMPOS DE INTERÉS

- * Inteligencia de negocios
- * Análisis de datos
- * Minería de datos
- * Tecnologías de información
- * Modelado y simulación de sistemas biológicos
- * Biorrobótica

FORMACIÓN ACADÉMICA

- * Ingeniera en Computación, Instituto Tecnológico Autónomo de México, México
- * Maestra en Tecnologías de Información y Administración, Instituto Tecnológico Autónomo de México, México
- * Doctora en Ingeniería, Universidad Nacional Autónoma de México, México

INVESTIGACIÓN ACTUAL

Modelado y simulación computacional del sistema de cognición espacial de las ratas.

Aplicación de técnicas de minería y análisis de datos a la predicción múltiple de citocinas asociado al pronóstico y supervivencia de cáncer de pulmón.

EXPERIENCIA ACADÉMICA

Año	Puesto
1997-Presente	Profesora Tiempo Completo Departamento Académico de Computación Instituto Tecnológico Autónomo de México (ITAM)
1996-1997	Profesora Tiempo Parcial Departamento Académico de Computación Instituto Tecnológico Autónomo de México (ITAM)
1996	Profesora de Tecnología para el Sector Público Instituto Tecnológico Autónomo de México (ITAM)

EXPERIENCIA PROFESIONAL

Año	Puesto
1994-1997	Analista y Programadora de Sistemas de Información Centro de Cómputo Instituto Tecnológico Autónomo de México (ITAM)

PUBLICACIONES MÁS RELEVANTES

Tejera G, Barrera A, Fellous J-M, Llofriú M, Weitzenfeld A, “Spatial Cognition: Robot Target Localization in Open Arenas based on Rat Studies”, Proceedings of the Defense Security + Sensing International Conference, Baltimore, Maryland, USA, May 2013.

Weitzenfeld A, Fellous J-M, Barrera A, Tejera G, “Allothetic and idiothetic sensor fusion in rat-inspired robot localization”, Proceedings of the Defense Security + Sensing International Conference, Baltimore, Maryland, USA, April 2012.

Barrera, A., Cáceres, A., Weitzenfeld, A., Ramirez-Amaya, V., “Comparative Experimental Studies on Spatial Memory and Learning in Rats and Robots”, Journal of Intelligent & Robotic Systems, Vol. 63, No. 3-4, pp. 361-397, Springer, ISSN: 0921-0296, September 2011.

Barrera, A. (Ed.), Advances in Robot Navigation, 238 pp., IN-TECH, Croatia, ISBN 978-953-307-346-0, June 2011.

Barrera, A., & Laschi, C., “Anticipatory Visual Perception as a Bio-inspired Mechanism Underlying Robot Locomotion”, Proceedings of the 32nd Annual International Conference of the IEEE Engineering in Medicine and Biology Society – EMBC 2010, Buenos Aires, Argentina, August 31–September 4, 2010, pp. 3206-3209, ISBN: 978-1-4244-4124-2.

Barrera, A., Weitzenfeld, A., Cáceres, A., & Ramirez-Amaya, V., “Spatial Memory and Learning: Towards a Set of Metrics to Evaluate Task Performance in Rats and Robots”, Proceedings of the IEEE International Conference on Robotics and Automation – ICRA 2010, Anchorage, Alaska, USA, May 3 – 8, 2010, pp. 1215-1220, ISBN: 978-1-4244-2040-4.

Barrera, A. (Ed.), Mobile Robots Navigation, 666 pp., IN-TECH, Vukovar, Croatia, ISBN 978-953-307-076-6, March 2010.

Barrera, A., & Weitzenfeld, A., “Behavioral Match Evaluation of Spatial Cognition in Rats and Robots”, Proceedings of the 31st Annual International Conference of the IEEE Engineering in Medicine and Biology Society – EMBC 2009, ISBN: 978-1-4244-3296-7, ISSN: 1557-170X, Minneapolis, Minnesota, USA, September 2 – 6, 2009, pp. 7188-7191.

Barrera, A., & Weitzenfeld, A., “Biologically-inspired Robot Spatial Cognition based on Rat Neurophysiological Studies”, Autonomous Robots, Vol. 25, No. 1-2, pp. 147-169, Springer Netherlands, ISSN: 0929-5593, August 2008.

Barrera, A., & Weitzenfeld, A., “Computational Modeling of Spatial Cognition in Rats and Robotic Experimentation: Goal-Oriented Navigation and Place Recognition in Multiple Directions”, Proceedings of the 2nd IEEE / RAS-EMBS International Conference on Biomedical Robotics and Biomechatronics – BioRob 2008, Scottsdale, Arizona, USA, October 19 – 22, 2008.

Barrera, A., & Weitzenfeld, A., “Rat-inspired Model of Robot Target Learning and Place Recognition”, Proceedings of the 15th Mediterranean Conference on Control and Automation – MED 2007, Athens, Greece, June 27 – 29, 2007.

Barrera, A., & Weitzenfeld, A., “Bio-inspired Model of Robot Spatial Cognition: Topological Place Recognition and Target Learning”, Proceedings of the 7th IEEE International Symposium on Computational Intelligence in Robotics and Automation – CIRA 2007, Jacksonville, Florida, USA, June 20 – 23, 2007.

Barrera, A., Weitzenfeld, A. “Bio-inspired Model of Robot Adaptive Learning and Mapping.” Proceedings of the IEEE/RSJ International Conference on Intelligent Robots and Systems – IROS 2006. Beijing, China. October 9 – 15, 2006.

Barrera, A., Weitzenfeld, A. “Biologically Inspired Neural Controller for Robot Learning and Mapping.” Proceedings of the IEEE World Congress on Computational Intelligence – WCCI 2006 / International Joint Conference on Neural Networks – IJCNN 2006. Vancouver, Canada. July 16 – 21, 2006.

Barrera, A., Weitzenfeld, A. “Return of the Rat: Biologically-Inspired Robotic Exploration and Navigation.” Proceedings of the 1st IEEE / RAS-EMBS International Conference on Biomedical Robotics and Biomechatronics – BioRob 2006. Pisa, Italy. February 20 – 22, 2006.