



## Publicaciones recientes Métodos numéricos, cómputo paralelo y optimización.

Exploring Class Visualizations for Neural Architecture Search

2024 MICAI 2024 Alejandro Rosales Pérez,

Quantifying differences between UGC and DMO's image content on Instagram using deep learning

2024 Information Technology & Tourism Angel Ramón Aranda Campos, Miguel Angel Alvarez Carmona, Angel Díaz Pacheco, Ansel Y. Rodríguez González, Rafael Guerrero

Finding the Set of Nearly Optimal Solutions of a Multi-objective Optimization Problem

2024 IEEE Transactions on Evolutionary Computation Carlos Segura González, Oliver Schutze, Angel E. Rodriguez-Fernandez, Carlos Hernandez

Heuristic algorithms for graph burning

2024 Latin-Iberoamerican Conference on Operations Research (CLAIO) 2024 Carlos Segura González, Jose Alejandro Cornejo Acosta, Blanca Verónica Zúñiga-Núñez, Valentin Calzada-Ledesma, Gabriela Alva-Zavala, Jesús García-Díaz

PACE solver description: CIMAT\_Team

2024 19th International Symposium on Parameterized and Exact Computation Carlos Segura González, Gara Miranda Valladares

Using Microfluidic Hepatic Spheroid Cultures to Assess Liver Toxicity of T-2 Mycotoxin

2024 Cells Ángel David Reyes Figueroa, Taroncher, M.; Gonzalez-Suarez, A.M.; Gwon, K.; Romero, S.; Rodríguez-Carrasco, Y.; Ruiz, M.-J.; Stybayeva, G.; Revzin, A.; de Hoyos-Vega, J.M.

Automatic Classification of Macular Edema in Retinal Fundus Images based on Deep Belief Networks

2024 20th International Symposium on Medical Information Processing and Analysis (SIPAIM) Iván Cruz Aceves, Martha Alicia Hernández González, Sergio Eduardo Solorio Meza, Gloria Paulina Trujillo Sanchez

High-Dimensional Feature Selection for Automatic Classification of Coronary Stenosis Using an Evolutionary Algorithm

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Improving Automatic Coronary Stenosis Classification Using a Hybrid Metaheuristic with Diversity Control

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Neural Architecture Search Using Trajectory Metaheuristics to Classify Coronary Stenosis

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Optimal Dataset Size for Fine-Tuning sEMG-Based Hand Gesture Recognition in Rehabilitation Prosthesis

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Numerical simulation of direct methanol fuel cells using computational fluid dynamics

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The Multi-Step Adomian Decomposition Method Applied to an SEIR COVID-19 Mathematical Model with a Vaccinated Population

2024 Journal of Hunan University Natural Sciences Luis Daniel Blanco Cocom,





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2024 Rev. int. métodos numér. cálc. diseño ing. Salvador Botello Rionda,





C. Segura, J.C. Castillo, O. Schütze, "The Importance of Diversity in the Variable Space in the Design of Multi-Objective Evolutionary Algorithms", *Applied Soft Computing* 136, 2023.

O. Hernández Constantino, C. Segura, "A parallel memetic algorithm with explicit management of diversity for the job shop scheduling problem", *Applied Intelligence* 52 (1), 2022.

I. de J. May-Cen, F. J. Hernandez-Lopez, R. Legarda-Sáenz, & C. Brito-Loeza, "Parallel algorithm for wrapped phase denoising", *Journal of Real-Time Image Processing*, 20(4), 2023.

F. J. Hernandez-Lopez, O. Muñiz-Pérez, "Parallel fractal image compression using quadtree partition with task and dynamic parallelism", *Journal of Real-Time Image Processing* 19(2), 2022.

Edgar Fuentes Figueroa and Oscar Dalmau. "Transportless conjugate gradient for optimization on Stiefel manifold." *Computational & Applied Mathematics* 39.3, 2020.  
Harry Oviedo, Oscar Dalmau and Rafael Herrera. An accelerated minimal gradient method with momentum for strictly convex quadratic optimization. *Bit Numer Math* 62, 591–606, 2022.

Trejo-Sánchez, J. A., Sansores-Pérez, C. E., García-Díaz, J., & Fernandez-Zepeda, J. A. . "Approximation Algorithm for the Minimum Hub Cover Set Problem". *IEEE Access*, 10, 51419-51427, 2022

Trejo-Sánchez, J. A., Madera-Ramírez, F. A., Fernández-Zepeda, J. A., López-Martínez, J. L., & Flores-Lamas, A.. "A fast approximation algorithm for the maximum 2-packing set problem on planar graphs". *Optimization Letters*, 17(6), 1435-1454, 2023

L. Blanco-Cocom, S. Botello-Rionda, L.C. Ordoñez, S.I. Valdez, Numerical simulation of direct methanol fuel cells using computational fluid dynamics. *International Journal of Hydrogen Energy*, 2024.

L. Blanco-Cocom, S. Botello-Rionda, L.C. Ordoñez, S.I. Valdez,, A Reaction-Convection-Dijusion Model for a PEM Fuel Cell. *Finite Elements in Analysis & Design*, 201, 2022.

L. Blanco-Cocom, S. Botello-Rionda, L.C. Ordoñez, S.I. Valdez, A Self-Validating Method via the Unification of Multiple Models for Consistent Parameter Identification in PEM Fuel Cells. *Energies*, 15, 2022.





L. Blanco-Cocom, S. Botello-Rionda, L.C. Ordoñez, S.I. Valdez, Robust parameter estimation of a PEMFC via optimization based on probabilistic model building, *Mathematics and computers in simulations*, 185, 2021.

M.A.Gil-Rios, I. Cruz Aceves, A. Hernández-Aguirre, E. Moya-Albor, "High-dimensional Feature Selection for Automatic Classification of Coronary Stenosis using an Evolutionary Algorithm", *Diagnostics*, 14(3), 268, 2024.

S. Botello-Aceves, A. Hernández Aguirre, S. Iván Valdez: The Directed Multi-Objective Estimation Distribution Algorithm (D-MOEDA). *Mathematics and Computers in Simulation*, 214: 334-351, 2023.

Ansel Y. Rodríguez-González, Ramón Aranda, Miguel Á. Álvarez-Carmona, Angel Díaz-Pacheco, and Rosa María Valdovinos Rosas, "X-FSPMiner: A Novel Algorithm for Frequent Similar Pattern Mining". *ACM Trans. Knowl. Discov. Data* 18, 5, <https://doi.org/10.1145/3643820>, 2024.

A. Díaz-Pacheco, M. A. Álvarez-Carmona, A. Y. Rodríguez-González, H. Carlos, R. Aranda. Measuring the Diference Between Pictures from Controlled and Uncontrolled Sources to Promote a Destination. A Deep Learning Approach, *International Journal of Interactive Multimedia and Artificial Intelligence*, <http://dx.doi.org/10.9781/ijimai.2023.10.003>, 2023.

