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PROPÓSITO: *Generación de Conocimiento*; SECTOR → DISCIPLINA: (Tecnologías de la Información y Comunicaciones → Computación)
- 2008-05-23  
An Ant Colony System Algorithm to Solve Routing Problems Applied to the Delivery of Bottled Products  
**Autor(es):** Cruz-Reyes, Laura; Delgado-Orta, José Francisco; González-Barbosa, Juan Javier; Torres-Jimenez, José Héctor; Fraire-Huacuja, Joaquín; Arrañaga-Cruz, Bárbara Abigail  
This work presents a methodology of solution for the well-known vehicle routing problem (VRP) based on an ant colony system heuristic algorithm (ACS), which is applied to optimize the delivery process of RoSLoP (Routing-Scheduling-Loading Problem) identified in the company case of study.  
REVISTA: Foundations of Intelligent Systems - *Springer-Verlag* (pags. 329-338), MÉXICO; ISSN: 0302-9743;  
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PROPÓSITO: *Generación de Conocimiento*; SECTOR → DISCIPLINA: (Tecnologías de la Información y Comunicaciones → Computación)
- 2008-05-23  
A Causal Approach for Explaining Why a Heuristic Algorithm Outperforms Another in Solving an Instance Set of the Bin Packing Problem  
**Autor(es):** Pérez, Joaquín; Cruz-Reyes, Laura; Pazos, Rodolfo A.; Landero-N., Vanesa; Reyes-Salgado, Gerardo; Zavala, Crispín; Fraire-Huacuja, Héctor J.; Pérez, Verónica  
This work approaches the problem of explaining through causal modeling the interrelations between instances characteristics and the inner workings of algorithms. For validating the results of the proposed approach, a set of experiments was carried out in a study case of the Tabu Search algorithm applied to the Bin Packing problem.  
REVISTA: Foundations of Intelligent Systems - *Springer-Verlag* (pags. 591-598), MÉXICO; ISSN: 0302-9743;  
DIRECCION ELECTRÓNICA: [http://link.springer.com/chapter/10.1007/978-3-540-68123-6\\_64](http://link.springer.com/chapter/10.1007/978-3-540-68123-6_64)  
PROPÓSITO: *Generación de Conocimiento*; SECTOR → DISCIPLINA: (Tecnologías de la Información y Comunicaciones → Computación)
- 2007-11-10  
DiPro: An Algorithm for the Packing in Product Transportation Problems with Multiple Loading and Routing Variants  
**Autor(es):** Cruz-Reyes, Laura; Nieto-Yáñez, Diana M.; Rangel-Valdez, Nelson; Herrera-Ortiz, Juan Arturo; González-Barbosa, Juan Javier; Castilla-Valdez, Guadalupe; Delgado-Orta, José Francisco  
The present paper approaches the loading distribution of trucks for Product Transportation as a rich problem. This is formulated with the classic Bin Packing Problem and five variants associated with a real case of study.  
REVISTA: MICAI 2007: Advances in Artificial Intelligence - *Springer-Verlag Berlin Heidelberg* (pags. 1078-1088), MÉXICO; ISSN: 0302-9743;  
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PROPÓSITO: *Generación de Conocimiento*; SECTOR → DISCIPLINA: (Tecnologías de la Información y Comunicaciones → Computación)
- 2007-09-01  
Impact of Dynamic Growing on the Internet Degree Distribution  
**Autor(es):** Ortega-Izaguirre, Rogelio; Meza-Conde, Eustorgio; Gómez-Santillán, Claudia; Cruz-Reyes, Laura; Turrubiates-López, Tania  
In this work a comparative study of the degree distribution for three different instances of the Internet was carried out, with information about the interconnection of domains. The Internet has a degree distribution power-law, that is, it has a great amount of weakly connected domains while a few domains have a great number of connections.  
REVISTA: Frontiers of High Performance Computing and Networking - *Springer-Verlag* (pags. 326-334), MÉXICO; ISSN: 0302-9743;  
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PROPÓSITO: *Generación de Conocimiento*; SECTOR → DISCIPLINA: (Tecnologías de la Información y Comunicaciones → Computación)
- 2007-08-31  
A Distributed Metaheuristic for Solving a Real-World Scheduling-Routing-Loading Problem  
**Autor(es):** Cruz-Reyes, Laura; Gonzalez-Barbosa, Juan Javier; Romero-Vargas, David; Fraire-Huacuja, Héctor Joaquín; Rangel-Valdez, Nelson; Herrera-Ortiz, Juan Arturo; Arrañaga-Cruz, Barbara Abigail; Delgado-Orta, José Francisco  
In this paper a real and complex transportation problem including routing, scheduling and loading tasks is presented. Most of the related works only involve the solution of routing and scheduling, as a combination of up to five different types of VRPs (Rich VRP), leaving away the loading task, which are not enough to define more complex real-world cases.  
REVISTA: Parallel and Distributed Processing and Applications - *Springer-Verlag* (pags. 68-77), MÉXICO; ISSN: 0302-9743;  
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PROPÓSITO: *Generación de Conocimiento*; SECTOR → DISCIPLINA: (Tecnologías de la Información y Comunicaciones → Computación)
- 2007-08-29  
Classic Cryptanalysis Applied to Exons and Introns Prediction  
**Autor(es):** Aguilar-R., Manuel; Fraire-Huacuja, Héctor; Cruz-Reyes, Laura; González-Barbosa, Juan J.; Castilla-V., Guadalupe; Gómez-Santillán, Claudia G.  
In this work, we propose a new methodology for the prediction of exons and introns based on a cryptanalysis method of Kasiski, using variants of three classical coding measures: codon usage, amino acid usage, and codon preference.  
REVISTA: Computational Science and Its Applications - *Springer-Verlag* (pags. 575-584), MÉXICO; ISSN: 0302-9743;  
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PROPÓSITO: *Generación de Conocimiento*; SECTOR → DISCIPLINA: (Tecnologías de la Información y Comunicaciones → Computación)
- 2007-08-29  
Improving the Efficiency and Efficacy of the K-means Clustering Algorithm Through a New Coverage Condition