

PERSONAL INFORMATION	Birthday: 8-Jul-1984 Address: Membrillo # 306, Int 3 ZIP Code: 02820 Mexico City	e-mail: rdglpz@gmail.com Cellular: +52 443 155 5416 Skype ID: rdglpz ORCID ID: 0000-0003-2772-0051	
CURRENT JOB	<b>Management and Coordination of Information and Communication Technology. (CGSTIC) at the Center of Research and Advanced Studies of the Polytechnic National Institute (CINVESTAV-IPN) . Mexico City, Mexico</b> Innovation with conversational agents with Big Data		
INTERESTS & SKILLS	<b>Programming and Data Base Managing Languages,</b> MATLAB, MATHEMATICA, Python, R, Java, C/C++, PHP-HTML-MySQL(SQL), CassandraDB(NoSQL, Cassandra Query Language).  <b>Research</b> Machine Learning, (SVM, Artificial Neural Networks, Fuzzy Logic). Data mining (efficient algorithms for nearest neighbors search), modelling and time series forecasting. Probabilistic Multi-model forecasting (Bayesian Approach). Global Optimization with Evolutionary Computing, stability analysis and parameter Identification of non-linear dynamical systems.  <b>Research groups and projects</b> Mexican Center of Energy Innovation Project: Forecasting the Natural Resources Required for the Production of Renewable Electric Power. <a href="https://www.ineel.mx/">https://www.ineel.mx/</a> . Applied Computational Intelligence Network. <a href="https://goo.gl/7B4RcE">https://goo.gl/7B4RcE</a> .  <b>Languages</b> English: 550 ITP TOEFL points. Italy: B1 Common CEFRL Level.		
ACADEMIC DEGREE	<b>Ph.D in Computer Science and Engineering.</b> (With European Doctorate mention). IMT School of Advanced Studies Lucca. Lucca, Italy. ( <i>Feb-2012 Jan-2016</i> ). Thesis: Time Series Forecasting Based on Classification of Dynamic Patterns. Advisors: PhD. Alberto Bemporad. PhD. Pantelis Sopasakis. Field of study: Time series analysis. <b>Taken Courses:</b> Semantics and Formal Methods. Complexity of Algorithms, Basic Linear Algebra. Principles of Parallel and Concurrent computing. Performance Modelling applied to Computer Networks. Specification, modelling and verification of reactive systems. Global and Local Optimization Introduction. Model checking, Optimum control, (Optimization Algorithms). Programming Methodologies, <i>Cloud Computing</i> . Theory of complex networks. Machine Learning).  <b>MSc in Electrical Engineering (Computer Systems Group).</b> Universidad Michoacana de San Nicolas de Hidalgo. Morelia, Mexico. ( <i>Mar-2008 Aug-2010</i> ). Thesis: Bifurcation Diagrams for Discontinuous or Non-differentiable Equations. Advisors: PhD. Juan Jose Flores Romero, PhD. Claudio Fuente E. Field of study: Evolutionary computing, nonlinear dynamical systems, stability analysis and optimization.		

### **B.Eng. in Computer Systems.**

Morelia Institute Of Technology. Morelia, Mexico. (2002 2007).

Thesis: Implementation and performance analysis of “**Linux Terminal Server Project**” for educational purposes.

Field of Study: Applications of distributed operative systems.

#### ACADEMIC EXPERIENCE

##### **Teaching.**

**Morelia Institute of Technology.** Morelia, Mexico.

- Structured programming and object oriented programming (Electronic and Industrial Engineering), Research Methodology (Computational Systems Engineering). (Aug-2011 Jan-2012).
- Database Fundamentals (Computational Systems Engineering), Structures and organization of data. (Technology Information Engineering) and Evaluation of software projects. (Jan-2011 Jul-2011).
- Operative systems, selected topics in programming and research fundamentals. (Aug-2010 Dec-2010).

**University of Morelia.** Morelia, Mexico.

- Web programming with PHP. (Aug-2009 Dec-2009).

#### PROFESSIONAL EXPERIENCE

**State Center for Information and Communications Technologies (CETIC).** (Mar-2007 Jun-2007). Morelia, Mexico.

Resident in physical infrastructure department.

Project: Performance analysis of **Linux Terminal Server Project** applied to basic education.

**Morelia Institute of Technology.** Morelia, Mexico. (Feb-2007)

Social Service Project: Develop of a PHP Web catalog for Social Service.

#### PUBLICATIONS

##### **Articles in Journal Citation Reports**

##### **Accepted**

- *Hector Rodriguez Rangel, Vicenç Puig, Rodrigo López Farías, Juan J. Flores* . Short-Term Demand Forecast using Bank of Neural Network Models Trained using Genetic Algorithms for the Optimal Management of Drinking Water Networks. *Journal of Hydroinformatics*. DOI: 10.2166/hydro.2016.199. ISSN: 1464-7141 **November 2016**.

##### **Under Review**

- *Juan J. Flores, José Cedeño Gonzalez, Rodrigo López Farías, Félix Calderón* . Evolving Nearest Neighbor Time Series Forecasters. (Enviado a *Journal of Soft Computing*, <https://goo.gl/hSV5SV>, el 25 de Agosto 2016).

##### **Next Submissions**

- *Rodrigo Lopez Farías, Vicenç Puig, Hector Rodriguez Rangel, Juan J. Flores Romero*. Probabilistic Selection of Qualitative Prediction Models of Water Demand Time-Series (Revista tentativa: *Journal of Hydroinformatics*, <http://jh.iwaponline.com/>).

##### **Peer Reviewed Accepted Articles in National and International Conferences**

##### **Accepted**

- **Comparison of Time Series Forecasting Techniques with respect to Tolerance to Noise.** *Juan J. Flores, Felix Calderon Solorio, Jose Rafael Cedeño Gonzalez, Jose*

Ortiz Bejar and Rodrigo Lopez Farias. (Pendiente) .*IEEE Autumn Meeting on Power, Electronics and Computing, Ixtapa , November 2016.*

- **Holt-Winters Residual Modelling using an ANN trained by GA and Time Series Validation Applied to Water Demand Forecasting** *Hector Rodriguez-Rangel, Vicenç Puig, Juan J. Flores and , Rodrigo López Farías.* (Pending). **3rd International Conference on Control and Fault-Tolerant Systems Barcelona, Spain. Septiembre 2016.**
- **Flow meter Data Validation and Reconstruction using Neural Networks: Application to the Barcelona Water Network** *Hector Rodriguez Rangel, Vicenç Puig, Juan J. Flores and , Rodrigo López Farías.* <https://goo.gl/i7muz7>. **2016 European Control Conference, Aalborg. June 2016.**
- **Qualitative and Quantitative Multi-Model Forecasting with Nonlinear Noise Filter Applied to Water Demand** *IEEE Autumn Meeting on Power, Electronics and Computing.* DOI: 10.1109/ROPEC.2015.7395122. **Ixtapa Mexico, November 2015.**
- **FNN a Fuzzy Version of the Nearest Neighbour Time Series Forecasting Technique** *Juan J. Flores, Jose Ortiz Bejar, Jose Rafael Cedeño, Carlos Lara-Alvarez and Rodrigo López Farías.* *IEEE Autumn Meeting on Power, Electronics and Computing.* DOI: 10.1109/ROPEC.2015.7395125. **Ixtapa Mexico, November 2015 .**
- **A Multiple-Model Predictor Approach Based on an On-Line Mode Recognition with Application to Water Demand Forecasting** *Rodrigo López Farías, Vicenç Puig.* *International work-conference on Time Series 1.* URI <https://goo.gl/njWQ1e>. **Granada Spain, July 2015.**
- **An implementation of a multi-model predictor based on the qualitative and quantitative decomposition of the time-series.** *Rodrigo. López, Vicenç Puig, Hector Rodriguez.* URI <http://hdl.handle.net/2117/81862>. *International work-conference on Time Series 1* **Granada Spain, July 2015.**
- **Optimization with gravitational Interactions** *Dr. Juan Flores, Rodrigo López, Julio Barrera.* *ROPEC XIII: Autumn Meeting of Electric power systems, electronic and computation ( Reunión de Otoño de Potencia, Electronica y Computacion)* **Morelia Mexico, November 2011.**
- **Gravitational Interactions Optimization.** *Juan Flores, Rodrigo Lopez, Julio Barrera.* *Learning and Intelligent OptimizatioN (LION 5)* DOI 10.1007/978-3-642-25566-3\_17. **Rome, Italy - Enero 2011.**
- **Particle swarm optimization with gravitational interactions for multimodal and unimodal problems.** *Juan J. Flores, Rodrigo Lopez and Julio Barrera.* In *Proceedings of the 9th Mexican International Conference on Artificial Intelligence (MICA I 2010)*, pages 3361-370. Springer-Verlag. DOI 10.1007/978-3-642-16773-7\_31. **Pachuca, Mexico. November 2010.**

#### CONFERENCES, SEMINARS & WORKSHOPS

- Given**
- **IV National Seminar of computer learning and intelligence (SNAIC).** Water demand prediction with Genetic Algorithms for the optimum optimization of a Drinking Water Distribution System. National Institute of Optics And Astrophysics (Instituto Nacional de Astrofísica, Óptica y Electrónica). Michoacan University of San Nicolas de Hidalgo (Universidad Michoacana de San Nicolás de Hidalgo). (Morelia, Mexico. September 2016).
  - **11º Congreso Estatal de Ciencia, Tecnología e Innovación, en Ciencias de la Ingeniería y Tecnología.** Búsqueda del Clique con la mayor Interconectividad en un Grafo utilizando Optimización basado en Colonia de Hormigas. **Morelia, Mexico. Octubre 2016.**
  - **11<sup>th</sup> State Congress of Science Technology and Innovation in Engineering and computer Science.** PSO with Interactive Niches and Quasi-Newton Local Searches. Search the most connected Clique in a Weighted Graph with Ant Colony Optimization. **Morelia, México. October 2016.**

- 10<sup>th</sup> State Congress of Science Technology and Innovation in Engineering and computer Science. PSO with Interactive Niches and Quasi-Newton Local Searches. **Morelia, Mexico. September 2015.**
- Activities of X Anniversary of the Instituto Tecnológico Superior de Ciudad Hidalgo - ' Evolutionary computing applied to dynamical systems'.(Ciudad Hidalgo, Mexico. October 2010).
- Week of Research Projects FIE of the UMSNH - 'Gravitational Interactions Optimization ' ( Morelia, México. Junio 2010 )
- Week of Research Projects FIE of the Michoacan University of San Nicolás de Hidalgo - - 'Bifurcation Diagrams using Artificial Intelligence Algorithms (Diagramas de Bifurcación Utilizando Herramientas de Inteligencia Artificial)' **Morelia, Mexico. June 2009.**

#### **Attended**

- 5th HYCON2 Ph.D. School on Control of Networked and Large-Scale Systems and the EFFINET Ph.D. School on Control of Drinking Water Networks (Lucca Italy, 1-5 of July 2013)
- Java workshop in the 2nd Week of Computation and Systems. *Morelia, Mexico (2006).*
- Analysis and Object Oriented Design using UML (Morelia Mexico, 8-12 of August 2011)