Dr. Rodrigo López Farías (Updated: *12 / 08 / 2016*)

PERSONAL INFORMATION

Birthday: 8 / Jul / 1984
Address: Aramén # 313
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Morelia, Mexico

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INTERESTS & SKILLS

Programming Languages
Matlab, MATHEMATICA, R, Java, C/C++, PHP-HTML-MySQL, Python, LISP.

Research
Machine learning, data mining, dimensionality reduction,time series, nonlinear dynamical systems, global optimization, evolutionary computing.

Languages
English: 550 ITP TOEFL points. Italian: B1 Common CEFRL Level

ACADEMIC DEGREE

PhD in Computer Science and Engineering (W. European Doctorate mention). Lucca, Italy. (February 2012 - January 2016)
Institute of Advanced Studies Lucca

- Thesis: Time Series Forecasting Based on Classification of Dynamic Patterns.
  - Advisors: Dr. Alberto Bemporad. Dr. Pantelis Sopasakis
  - Study field: Time series analysis.

MSc in Electrical Engineering (Branch: Computational Systems). *Morelia, Mexico. (March 2008 - August 2010)*
Univesidad Michoacana de San Nicolas de Hidalgo

- Thesis: Bifurcation Diagrams for Discontinuous or Non-differentiable Equations.
  - Advisors: Dr. Juan Jose Flores Romero, Dr. Claudio Fuerte E.
  - Keywords: Evolutionary computing, nonlinear dynamical systems, stability analysis and optimization.

Engineer in Computational Systems. *Morelia, Mexico (2002-2007)*
Instituto Tecnologico de Morelia

- Thesis: Implementation and performance analysis of **"Linux Terminal Server Project"** for educational purposes.
  - Topic: Distributed operative Systems.

ACADEMIC EXPERIENCE

Instituto Tecnológico de Morelia. Morelia, Mexico.

Teaching **August 2011 - January 2012**

- Structured programming and object oriented programming (In Electronic and Industrial Engineering), Research Methodology (In Computational Systems Engineering).

January 2011 - July 2011

- Database Fundamentals (Computational Systems Engineering), Structures and organization of data. (Technology Information Engineering) and Evaluation of software projects.

August 2010 - December 2010

- Operative systems, selected topics in programming and research fundamentals.

Universidad de Morelia. Morelia, Mexico.

Teaching **August 2009 - December 2009**

- Web programming with PHP

Professional Experience

State Center for Information and Communications Technologies (CETIC). Morelia, Mexico.

Resident in physical infrastructure department **March 2007 - June 2007**

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

Instituto Tecnologico de Morelia. Morelia, Mexico.

Social Service Project **February 2007**

- Develop of a PHP Web catalog for Social Service.

IMPULSA **May 2005**

- Young entrepreneurs program: IMPULSA.

Publications

Refereed Journal Articles

Accepted

- *Hector Rodriguez Rangel, Vicenc 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 Engineering Applications of Artificial Intelligence.*(2016)

Refereed Conference Papers

Submitted

- *Juan J. Flores, Felix Calderon Solorio, Jose Rafael Cedeño Gonzalez, Jose Ortiz Bejar and Rodrigo Lopez Farias.* Comparison of Time Series Forecasting Techniques with respect to Tolerance to Noise *IEEE Autumn Meeting on Power, Electronics and Computing* **Ixtapa México, November 2016** (Under Revision).

Accepted

- *Hector Rodriguez-Rangel, Vicenc Puig, Juan J. Flores and , Rodrigo López* Farías. Flow meter Data Validation and Reconstruction using Neural Networks: Application to the Barcelona Water Network **3rd International Conference on Control and Fault-Tolerant Systems, Barcelona, Spain. 2016** (To be published).
- *Hector Rodriguez Rangel, Vicenc Puig,Juan J. Flores and , Rodrigo López Farías. Flow meter Data Validation and Reconstruction using Neural Networks: Application to the Barcelona Water Network* **2016 European Control Conference, Aalborg, Denmark. June 2016**.
- *Rodrigo López Farías, Juan J. Flores and Vicenc Puig.* Qualitative and Quantitative Multi-Model Forecasting with Nonlinear Noise Filter Applied to Water Demand *IEEE Autumn Meeting on Power, Electronics and Computing* **Ixtapa México, November 2015** .
- *Juan J. Flores, Jose Ortiz Bejar, Jose Rafael Cedeno, Carlos Lara-Alvarez and Rodrigo López Farías* FNN a Fuzzy Version of the Nearest Neighbour Time Series Forecasting Technique *IEEE Autumn Meeting on Power, Electronics and Computing* **Ixtapa México, November 2015** .
- *Rodrigo Lópea Farías, Vicenc Puig* A Multiple-Model Predictor Approach Based on an On-Line Mode Recognition with Application to Water Demand Forecasting *International work-conference on Time Series 1* **Granada Spain, July 2015**.
- *Rodrigo. López, Vicenc Puig, Hector Rodriguez* An implementation of a multi-model predictor based on the qualitative and quantitative decomposition of the time-series *International work-conference on Time Series 1* **Granada Spain, July 2015**.
- *Dr, Juan Flores, Rodrigo López, Julio Barrera.* Optimization with gravitational Interactions *ROPEC XIII: Autumn Meeting of Electric power systems, electronic and computation (Reunión de Otoño de Potencia, Electróinca y Computación)* **Morelia México, November 2011**.
- Juan Flores, Rodrigo Lopez, Julio Barrera. Gravitational Interactions Optimization. In *Learning and Intelligent OptimizatioN* (LION 5) **Rome, Italy - January 2011**.
- Juan J. Flores, Rodrigo Lopez and Julio Barrera. Particle swarm optimization with gravitational interactions for multimodal and unimodal problems. In *Proceedings of the 9th Mexican International Conference on Artificial Intelligence (MICAI 2010)*, pages 361–370. Springer-Verlag. **Pachuca, México. November 2010.**

Conferences, Seminars & Workshops

Given

- 10mo Congreso Estatal de Ciencia, Tecnología e Innovación, en Ciencias de la Ingeniería y Tecnología. PSO con Nichos Interactivos y Búsquedas locales con Quasi-Newton (Morelia, México. September 2015)
- Activities of X Anniversary of the Instituto Tecnológico Superior de Ciudad Hidalgo - ' Evolutionary computing applied to dynamical systems'.(Morelia, México. October 2010).
- Week of Research Projects FIE of the UMSNH - 'Gravitational Interactions Optimization ' (Morelia, México. June 2010).
- Week of Research Projects FIE of the UMSNH - 'Bifurcations Diagrams using Artificial Intelligence Tools'(Morelia, México. 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)