Yasser Gonzalez Fernandez

Curriculum Vitae — Aug/2014

Location — Toronto, Canada.
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Education

2013–present **MA, Information Systems & Technology**. York University, Canada.
Coursework: Advanced Topics in Information Technology — Mining of Massive Datasets, Advanced Information Retrieval Systems, Introduction to Computational Linguistics, Research Methods in Information Technology, ...

2011–2012 **Graduate-Level Coursework, Mathematics**. University of Havana, Cuba.
Coursework: Multivariate Statistics, Nonparametric Tests — Methods Based on Ranks, Linear Models, Stochastic Simulation, Linear & Integer Programming, Heuristic & Metaheuristics Algorithms, Introduction to Parallel Computing.

2006–2011 **BSc, Computer Science**. University of Havana, Cuba.
Grade Point Average: 5.0/5.0 (Summa Cum Laude).
Coursework: Algebra, Mathematical Analysis, Probability & Statistics, Discrete Mathematics, Theory of Programming Languages, Design & Analysis of Algorithms, Compiler Construction, Numerical Methods, Operating Systems, Database Systems, Software Engineering, Computer Networks, Artificial Intelligence, Information Systems, ... (from a total of 58 courses).
Thesis: Estimation of Distribution Algorithms Based on Copulas and Vines.
Thesis Supervisor: Marta Soto.

Tech. Skills

R — Python — MATLAB/Octave — C/C++ — Java — C# (.NET and Mono)
MapReduce — Hadoop — SQL — JavaScript — HTML(5) — CSS — LaTeX
Git — Subversion — Shell scripting — GNU/Linux sysadmin.

Experience

Sep/2013–present **Research & Teaching Assistant**. York University, Canada.

- Research on the use of thresheld convergence to improve the performance of search heuristics on multi-modal optimization problems (see **Publications**).
- Teaching assistant for the courses AP/ITEC 1620 Object-Based Programming (four sessions), AP/ITEC 2620 Introduction to Data Structures (one session), and AP/ITEC 1000 Introduction to Information Technologies (one session).

Sep/2011–Aug/2013 **Research Assistant**. Institute of Cybernetics, Mathematics and Physics, Cuba.

- Designed new EDAs based on copulas and vines (VEDAs) (see **Publications**).
- Created software in MATLAB/Octave, a collection of R packages available on CRAN, and a C library for dependence modeling using vines (see **Software**).
- Co-supervised a BSc thesis in Computer Science.

Oct/2011–Apr/2013 **Software Developer**. Julio Menendez LLC, USA.

- Developed Django back-ends exporting REST APIs for mobile/web apps. The system provided data to the apps and performed time-consuming tasks asynchronously.
- Front-end developer of JavaScript intensive web apps by making use of libraries such as RequireJS, jQuery, Backbone.js, mustache.js, among others.
- Other projects including WordPress plug-in development and web scraping.

Aug/2012–Dec/2012 **Software Developer**. Abalt Ltd., Spain.

- Developed a web application in Python & Django to process a large volume of scanned documents (OCR, text segmentation and extracting relevant information).

Publications

Journal Papers & Book Chapters

Y. Gonzalez-Fernandez and M. Soto. copulaedas: An R Package for Estimation of Distribution Algorithms Based on Copulas. *Journal of Statistical Software*, 58(9):1–34, 2014. http://www.jstatsoft.org/v58/i09.

M. Soto, A. Ochoa, Y. Gonzalez-Fernandez, Y. Milanés, A. Álvarez, D. Carrera, and E. Moreno. Vine Estimation of Distribution Algorithms with Application to Molecular Docking. In S. Shakya and R. Santana, editors, *Markov Networks in Evolutionary Computation*, volume 14 of *Adaptation, Learning, and Optimization*, pages 209–225. Springer-Verlag, 2012. http://link.springer.com/chapter/10.1007/978-3-642-28900-2_13.

Peer-Reviewed Conference Proceedings

Y. Gonzalez-Fernandez and S. Chen. Identifying and Exploiting the Scale of a Search Space in Particle Swarm Optimization. In *Genetic and Evolutionary Computation Conference 2014 (GECCO '14)*, pages 17–24. ACM, 2014. http://doi.acm.org/10.1145/2576768.2598280.

Y. Gonzalez-Fernandez, D. Carrera, M. Soto, and A. Ochoa. Vine Estimation of Distribution Algorithms. In *VIII Congreso Español sobre Metaheurísticas, Algoritmos Evolutivos y Bioinspirados (MAEB '12)*, 2012. http://congresomaeb2012.uclm.es/papers/paper_99.pdf.

Technical Reports & Preprints

Y. Gonzalez-Fernandez and M. Soto. A Survey of Estimation of Distribution Algorithms Based on Copulas. Technical Report ICIMAF 2012-679, Institute of Cybernetics, Mathematics and Physics, Cuba, 2012. ISSN 0138-8916.

M. Soto, Y. Gonzalez-Fernandez, and A. Ochoa. Modeling with Copulas and Vines in Estimation of Distribution Algorithms. *Submitted for publication*, 2012. http://arxiv.org/abs/1210.5500.

(See http://researchgate.net/profile/Yasser_Gonzalez-Fernandez for other publications.)

Software

copulaedas — R package for Estimation of Distribution Algorithms based on copulas. http://cran.r-project.org/package=copulaedas

vines — R package for multivariate dependence modeling with vines. http://cran.r-project.org/package=vines

cec2013 — R package with the benchmark functions for the IEEE CEC 2013 Special Session and Competition on Real-Parameter Single Objective Optimization. http://cran.r-project.org/package=cec2013

dml — C library for dependence modeling using C-vines, D-vines and R-vines. http://github.com/yglezfdez/dml/

Arachne — A Python search engine for files shared via FTP and similar protocols. http://github.com/yglezfdez/arachne/

diglib — A personal digital document management software written in GTK+ and Python. http://github.com/yglezfdez/diglib/

(See http://github.com/yglezfdez/ for other open-source software.)