Carlos López Roa

Technologist

contact

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languages

Spanish / Native
English / TOEFL
German / A1

programming

C, C++, R
Java, Python
Shell-Bash
SQL, XML
CSS3 & HTML5
JavaScript
Matlab
Mathematica
LaTeX, BibTeX

mathematical expertise

Complex & real analysis
Linear algebra
Analytical geometry
Multivariable calculus
Superior algebra
Ordinary & Partial
Differential Equations
Statistics & Probability
Functional analysis
Finite element analysis
Neural networks design

interests

Data mining, Mathematical modeling, Big Data analytics, Computer simulation, Cloud computing, Internet of things, Sensorgrid, Artificial Intelligence, Machine Learning, Web Crawling, Embedded systems

education

10/09-04/14 **B.Sc.** Technology — Center of applied Physics and advanced Technology, UNAM, Qro, Mex
Bubble dynamics subject to novel shockwave: High speed video
summa cum laude, top 3 best GPA 2011, 2012, P.L. 08807255

experience

06/14-Today **Prosciana** — Director of Technologic development

01/14-06/14 **Vintalent Solutions** — Data miner

01/13-07/13 **National Autonomous University of Mexico, Campus Juriquilla** — Teacher assistant
Classical Mechanics, Bachelor, **Main Professor:** Ph.D. Miguel de Icaza Herrera
Electronics, Bachelor, **Main Professor:** M.Sc. Francisco Fernández Escobar

02/13-07/13 **G&C Consultoría** — Statistical programmer
Project Manager: Q.F.B. Magali Aguilar Ortz

08/12-12/12 **G&C Consultoría** — Statistical programmer
Project Manager: M.Sc. María de los Ángeles Escamilla

08/11-12/11 **G&C Consultoría** — Graphic developer
Project Manager: M.Sc. María de los Ángeles Escamilla

technical skills

Extensive ability in mathematical software, numerical simulations and computer assisted symbolic calculus. Analogical electronics abilities. Microcontroller programming and implementation. Big Data Analytics using Apache Hadoop.

Embedded Systems: Software and hardware development with Microchip PIC family, Arduino platform, Raspberry Pi and Texas Instrument Launchpad

Most common productivity tools on Windows, OS X, Linux desktop and Linux servers

Expertise running multiple instances and services in the AWS cloud: EC2, RDS, S3, DynamoDB, EMR, SES

Matlab. Experience: Linear algebra, Fourier analysis, non-linear numerical simulations, numerical methods, statistics, programming.

Mathematica. Experience: Statistics, data visualization, functional analysis, differential geometry, complex analysis, linear algebra, calculus, Wavelet analysis and hardware data streaming

extra courses

- II Multidisciplinary mathematical Workshop on applications to other sciences, Mathematics Institute, UNAM, Juriquilla, Quertaro, 24 hours, 2014
- IX Mathematics Summer School, Mathematics Institute, UNAM, Cuernavaca, Morelos. 40 hours, June 2012
- XXVII Vctor Neumann-Lara Colloquium in Graph and Combinatorial Theory and its Applications, Tlaxcala, Tlax., 32 hours, March 2012
- Mathematics Summer School in Queretaro, Center for Innovation in Mathematics, Quertaro, Qro, 54 hours, June 2011

social service

Research internship in the Shockwave Laboratory in CFATA-UNAM, 520 hrs.

publications

- López-Roa, C., Perez, L.E., Pedroza, J.C., Icaza, M. de, Castano, V.M.: *Mitos y realidades sobre la situación de los recursos hídricos*, (2010). A.M Newspaper., Section *Ciencia hoy*, April 24, 2010.
- Perez-Margay, L.E., López-Roa, C., Pedroza, J.C., Icaza, M. de, Castano, V.M.: *Optimización y aprovechamiento de los recursos hídricos.* Memorias del V Coloquio en Tecnología. p. 207. Universidad Nacional Autónoma de México, (2010). ISBN: 978-607-02-1439-4
- López-Roa, C., Aragón, J.L.: *Programación de Álgebras de Clifford en Mathematica*. Memorias del sexto coloquio de Tecnología. Universidad Nacional Autónoma de México (2012). ISBN: 978-607-02-3655-6
- López-Roa, C., Vargas, A.: *Control robusto de biorreactores basado en modos deslizantes.* Memorias del octavo coloquio de Tecnologa. Universidad Nacional Autónoma de México (2012). ISBN: 978-607-02-3654-9
- López-Roa, C., Santamaría-Holek, I.: *Análisis dinámico del oscilador salino*. Memorias del noveno coloquio de Tecnología. p. 105. Universidad Nacional Autónoma de México. (2012). ISBN: 978-607-02-3943-4

references

Miguel de Icaza Herrera, PhD. e-mail: icaza@fata.unam.mx;
Tel: 442-2381160

- Researcher in Centro de Fsica Aplicada y Tecnologa Avanzada de la UNAM.
- Molecular Engineering in Materials department.