Carlos López Roa

Technologist | Data Scientist | Entrepreneur

contact

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languages

Spanish / Native
English / TOEFL
French / B2
German / A2
Italian / A1

programming

C, C++ , R, Java,
♥Python
Bash, SQL, XML
CSS, HTML & JS, PHP
Matlab, Mathematica
Prolog, Arduino &
Processing
Assembler, Logo
LaTeX, BibTeX

mathematics

Complex & real analysis
Linear algebra
Graph Theory
Multivariable calculus
Ordinary & Partial
Differential Equations
Statistics & Probability
Functional analysis
Finite element analysis
Wavelet Analysis
Dynamical Systems

data science

Convex optimization
Factorial Analysis
Classification
Clustering
Text Mining & NLP
Association Rules
Regression
Decision Trees
Neural Networks
Support Vector
Machines
Probabilistic Graphical
Models

interests

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

education

09/16-02/17 **M.Sc.** Data Mining and Knowledge Management Università Piemonte Orientale, AL, IT
Speciality: Relational Data Mining

09/15-08/16 **M.Sc.** Data Mining and Knowledge Management Université Lumière Lyon 2, Lyon, FR
Speciality: Data Mining and Complex System Modelling

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

experience

03/17-09/17 **Société nationale des chemins de fer français (SNCF)** Data Scientist
Keywords: GIS, Data Mining, Machine Learning, Deep Learning
Projects: Spatiotemporal data mining: Train delay prediction
Data consolidation trough cleaning and preprocessing. Datawarehouse design and implementation. Non linear regression, statistical learning and deeplearning

02/15-08/15 **Dattlas - Kio Networks** Data Scientist
Keywords: Big Data, SAP HANA, Business Intelligence
Projects: Televisa-Izzi
SQL Scripting for OLAP analysis and custom made KPI calculation. Client conciliation of KPI results. Implementation and support of a Data Warehouse in SAP HANA with ETLs coming from different sources in different schemas. Reporting of custom made KPIs in mobile devices. Massive Parallel Processing with In-Memory RDMS.

06/14-06/16 **Prosciana** Founder, CTO
Keywords: Big Data, Cloud Computing, Internet of Things, Web Services
Projects: K13 | Alarmex | TopCar | Ultralam | Moringa | Lehvi | deconb | Britcan
Full stack development of web services for several stake-holders. Client conciliation of final result. Support of application and life cycle management.

01/14-06/14 **Vintalent Solutions** Data Scientist
Keywords: Web Services, Data Mining
Structuring data from unstructured data sources. Data collection and de-duplication using web service implementation. Lifecycle management of obtained entities

08/12-07/13 **G&C Consultoría** Data Scientist
Keywords: Web Services, Statistical Analysis
Projects: UAQ Chemistry | UAQ Nutrition | UAQ Engineering | UAQ Psychology
Data collection using web service implementation. Pre-processing and statistical analysis of the data. Summarised presentation in custom made KPIs and dashboards.

technical skills

Big Data Analytics using Apache Hadoop, Apache Spark and SAP HANA.

In memory database management using Key-Value data stores in Redis.

Graph databases modeling and analysis using Neo4j

Scalable, full-text information retrieval using Apache Solr

Deep Learning neural networks using Tensorflow

Expertise managing cloud instances and services in Amazon Web Services

Extensive ability in mathematical modelling, numerical simulations and computer assisted symbolic calculus.

Analogical electronics abilities. Microcontroller programming and implementation.

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

extra courses

- Data Science Specialization - Johns Hopkins University - Coursera
- R Programming - Johns Hopkins University - Coursera
- Machine Learning - Stanford University - Cousera
- Web Application Architectures - The University of New Mexico - Coursera
- Startup Engineering - Stanford University - Coursera
- Web Intelligence and Big Data - Indian Institute of Technology Delhi - Cousera
- II Multidisciplinary mathematical Workshop on applications to other sciences, Mathematics Institute, UNAM, Juriquilla, Querétaro, 24 hours, 2014
- IX Mathematics Summer School, Mathematics Institute, UNAM, Cuernavaca, Morelos. 40 hours, June 2012
- XXVII Víctor Neumann-Lara Colloquium in Graph and Combinatorial Theory and its Applications, Tlaxcala, Tlax., 32 hours, March 2012
- Mathematics Summer School in Querétaro, Center for Innovation in Mathematics, Querétaro, Qro, 54 hours, June 2011

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 Tecnología. 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