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Education

- **University of Buenos Aires** — Buenos Aires, Argentina
  Postgraduate Diploma in Data Mining and Knowledge Discovery — *March 2011 - Dec 2012*
- **Simón Bolívar University** — Caracas, Venezuela
  Bachelor of Science in Applied Mathematics (Scientific Computing and Statistics) Sep. 2005 - Feb. 2011
  - Senior Thesis: Study and Analysis of low-cost methods for nonlinear optimization problems with linear constraints

Work Experience

- **Wunderman** — Buenos Aires, Argentina
  Researcher - Semi-Senior Data Scientist — *March 2012 - Present*
  - Development and study of predictive models using techniques such as linear, logistic, Zero-Inflated Poisson regression and support vector machines
  - Segmenting Markets by bagged clustering
  - Customer-Based Analysis in a Discrete-Time Noncontractual Setting
  - Survival analysis to understand customer behaviour
  - Twitter sentiment analysis using `R`
  - Management of huge data bases using `SQL Server`
  - The main programming languages used have been `R`, `MATLAB`, `SPSS` and `SQL`
- **DRIDCO @ZonaJobs.com** — Buenos Aires, Argentina
  Researcher - Mathematical Scientist — *May 2011 - March 2012*
  - I was involved in several projects related to the recommendation algorithms employed by the system (collaborative filtering, content based filtering). Also, I researched and worked with different machine learning approaches in order to tackle the well known cold start problem.

  Tasks carried out:

  - Recommender Systems
  - Machine Learning algorithms
  - Text Mining
  - Database Management
  - The assignment problem
  - The main programming languages used were `PYTHON` and `SQL`
- **Department of Pure Mathematics (Simón Bolívar University)** — Caracas, Venezuela
  Instructor — *Sep. 2008 - July 2010*
  - Responsible for the practices of the following courses:
    MA1112 (Integration);
    MA1113 (Linear Algebra);
    MA2115 (Ordinary Differential Equations).
  - Partner in the development of the guide for the course MA1111 in LaTeX.
- **Department of Scientific Computing (Simón Bolívar University)** — Caracas, Venezuela
  Instructor — *Jan. 2007 - Dec. 2007*
  - Responsible for the practices of the course CO-2111(Scientific Computing with Matlab). It is a undergraduate course related to programming, optimization and numerical calculus.

Programming Skills

Programming Languages: `MATLAB/OCTAVE, PHYTON, FORTRAN, C`

Optimisation Softwares: `LINGO, LPSOLVE, WINQSB`

Database Management Systems: `SQL Server, MySQL`

Machine Learning & Statistical Softwares: `R, SPSS, SAS, RapidMiner`

Languages

Mother tongue: *Spanish*

English - IELTS band score 7. May 2013

Courses and Conferences

May 2013 Fourth congress of applied, computational and industrial mathematics (IV MACI 2013)

October 2011 VI Argentine Conference on Data Mining

October - December 2011 Machine Learning - Advanced Track (Stanford online course)

July - August 2011 Writing Queries SQL Server 2005 at Educación IT

May 2011 Third congress of applied, computational and industrial mathematics (III MACI 2011)

August - December 2010 Advanced English Course at CVA

April 2010 Introduction to SAS

October 2009 Colombia Venezuela VI Meeting of Statistics and Mathematics Applications VIII Conference

October 2009 Time Series Analysis

April-July 2008 Computational Methods of Linear Algebra

UBA Graduate Studies Courses

- *Mandatory courses*: Machine Learning, Data Mining, Data Analysis, Statistical approach to machine learning, Data Mining applied to economics and finance, Data Mining applied to science and technology.
- *Final Work*: Image Processing: Color Reduction by K-means clustering and Principal Components Analysis.

USB Advanced Undergraduate Courses

- *Optimization*: Linear Programming, Nonlinear Optimization I, Nonlinear Optimization II, Integer Programming, Optimization Models I.
- *Numerical Analysis*: Numerical Analysis I, Numerical Analysis II, Numerical Linear Algebra, Numerical Differential Equations, Advanced Scientific Computing.
- *Probability and Statistics*: Probability Theory, Stochastic Processes, Financial Data Mining.
- *Others*: Other: Solving Industrial Problems Workshop, Cryptography, Mathematical Modeling.

Senior Thesis with Distinction Award

Study and Analysis of low-cost methods for nonlinear optimization problems with linear constraints

I studied and compared different methods to solve nonlinear optimization problems with linear constraints. I employed interior point methods and spectral gradient descent algorithms to solve problems arriving from classification tasks such as support vector machines. A new algorithm was proposed for the quadratic programming problem consisting in approximating the hessian matrix of the objective function by a multiple of the identity matrix. This scalar is the step length used by Brazilai and Borwein in their gradient method for unconstrained minimization problems. In this project I combined different areas of mathematics such as linear algebra and numerical analysis that helped me to obtain good results in an extensive numerical experimentation.

Honors and Awards

- Senior Thesis with Distinction Award.
- University Scholarship, 2005-2010.
- Beneficiary of the program "Aporte al Mérito" by Fondo para el Desarrollo Estudiantil de la Universidad Simón Bolívar (FONDESIBO), 2008.

Research Interests

I am a Bachelor in Applied Mathematics. My research interests lie in the intersection of machine learning, optimization and scientific computing. Some of the topics about I'm really interested are:

- Support Vector Learning;
- Recommender Systems;
- Nonlinear Optimization;
- Numerical Analysis;
- Statistical Learning Theory.

Personal References

- PhD. María De Los Ángeles González-Lima
  `mlima@usb.ve`
  `http://www.co.usb.ve/es/node/97`

- PhD. Marcos Raydan
  `mraydan@usb.ve`
  `http://kuainasi.ciens.ucv.ve/mraydan/`

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