

CURRICULUM VITAE

OSCAR FRANCISCO PEREDO ANDRADE

PERSONAL INFORMATION

Date of birth: 5th February 1983
Citizenship: Chilean
Marital status: Married
Email: operedo gmail.com

EDUCATION

2010-today UNIVERSITAT POLITÈCNICA DE CATALUNYA
Master's Degree in Information Technology (Student). Minor in Supercomputing.

2010 UNIVERSIDAD DE CHILE
Mathematical Engineering Degree.
Thesis: *Implementation of a Semidefinite Programming method with Parallel Computing*. Guided by Prof. Héctor Ramírez. Joint work with *Center for Mathematical Modeling*, Universidad de Chile.

2008 UNIVERSIDAD DE CHILE
Computer Science Engineering Degree.
Thesis: *Pattern reproduction in Geostatistic simulation*. Guided by Prof. Julián Ortiz. Joint work with *Department of Mining Engineering*, Universidad de Chile.

2001–2006 UNIVERSIDAD DE CHILE
B.S. in Engineering Sciences. Major in Computer Science, Major in Mathematics

INTEREST AREAS

Mathematical Programming and Optimization

High Performance Computing

Data Mining and Statistics

Applications in Mining Industry and Financial Services

RESEARCH AND WORK EXPERIENCE

05/2011–today BARCELONA SUPERCOMPUTING CENTER
Overview: Resident Student / Junior Engineer Consolidar Project. Development of mathematical optimization algorithms for non-linear partial differential equations simulations in a high performance computing environment. Keywords: **Non-linear optimization, PDE's, Adjoint method, High Performance Computing**.

03/2008–07/2011 FREELANCE
Overview: Quantitative analyst of Commodities and Bonds markets for private investors. Development of automatic trading strategies with TradeStation 8.3+ as brokerage and trading software, and Octave, Java and other software tools to perform data management and analysis. Design and testing of money management strategies. Keywords: **Automated Trading, Financial services**.

- 07/2010–08/2010 SUPERMERCADOS DEL SUR Ltda., Chilean retail company.
Overview: Development of an application that calculates the optimal number of cashiers and their schedule that maximize the coverage of a given projected demand. Keywords: **Crew Scheduling, Global Optimization Heuristics.**
- 12/2008–02/2009 UNIVERSIDAD DE CHILE, Center for Mathematical Modeling
Overview: Support in the development of a Java Swing interface and assist in the development of a Crew Scheduling algorithm for the Chilean train transportation company FCAB S.A. using high performance computing facilities. Keywords: **Crew Scheduling, Integer Programming, High Performance Computing.**
- 03/2008–03/2009 UNIVERSIDAD DE CHILE, Center for Mathematical Modeling
Overview: Research at the Mathematical Modeling for Geomechanics Laboratory (MM-Geo) with the Geomechanics department of El Teniente Division, CODELCO (Chilean largest mining company). Keywords: **Mining, Geomechanics.**
- 12/2007–02/2008 ANGLO AMERICAN CHILE, División Los Bronces, Chilean/South-African mining company.
Overview: Summer internship III (Computer Science, Mathematical Engineering). Support in the Finance and Administration department. Development of management computational tools to help permanent staff. Study the financial aspects of the copper mining industry. Keywords: **Mining, Information Technology.**
- 03/2006–05/2006 DECATRANS S.A., Chilean transport and logistics company.
Overview: Summer internship II (Computer Science). Research and development of algorithms for Vehicle Routing with time windows. Keywords: **Vehicle Routing, Integer Programming.**
- 12/2005–02/2006 UNIVERSIDAD DE CHILE, Center for Mathematical Modeling
Overview: Summer internship II (Mathematical Engineering). Research and development of algorithms for Mine Planning using high performance computing facilities. Keywords: **Mining, Integer Programming, High Performance Computing.**
- 12/2004–02/2005 UNIVERSIDAD DE CHILE, Center for Mathematical Modeling
Overview: Summer internship I (Computer Science). Design and implementation of a database for UMESAM project (Meteorology). Design of a system for extraction of information in plots, diagrams and reports. Keywords: **Meteorology, Databases.**

TEACHING ASSISTANT

Algebra
 Calculus
 Ordinary Differential Equations
 Linear Optimization
 Nonlinear Optimization
 Optimal Control

PUBLICATIONS

- 2011 B. Eguzkitza, G. Houzeaux, R. Aubry and O. Peredo. *An Implicit and Parallel Chimera Type Domain Decomposition Method*. Proceedings of 20th Conference on Domain Decomposition methods, San Diego Supercomputer Center, La Jolla, California, 2011.

2011	A. S. Kapoor, P. Nithiarasu, R.V. Loon, O. Peredo and M. Vazquez. <i>Non-Invasive and Inverse Property Estimation of Arterial Elasticity</i> . Submitted to Bioengineering11, hosted by The School of Engineering & Materials Science, Queen Mary, University of London, London, 2012.
2011	O. Peredo and J. M. Ortiz. <i>Multiple-point geostatistical simulation based on genetic algorithms implemented in a shared-memory supercomputer</i> . Submitted to The 9th International Geostatistics Congress, Oslo, 2012.
2011	O. Peredo and J. M. Ortiz. <i>Parallel implementation of simulated annealing to reproduce multiple-point statistics</i> . Computers & Geosciences, In Press, Corrected Proof:-, 2010.
2010	J. M. Ortiz and O. Peredo. <i>Multiple point geostatistical simulation with simulated annealing: Implementation using speculative parallel computing</i> . In P. M. M. Atkinson and C. D. D. Lloyd, editors, geoENV VII Geostatistics for Environmental Applications, volume 16 of Quantitative Geology and Geostatistics, pages 383-394. Springer Netherlands, 2010.

AWARDS AND SCHOLARSHIPS

2001	Outstanding Student Award by Universidad de Chile.
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SCHOOLS AND SEMINARS

05/2011	23rd International Conference on Parallel Computational Fluid Dynamics 2011. Barcelona, Spain.
08/2010	(Speaker) First HPC Lab training, subject ScaLAPACK. Conference hosted by <i>Center for Mathematical Modelling</i> , Chile.
09/2009	(Speaker) First national conference of Mathematical engineering students. Conference hosted by <i>Universidad de Santiago de Chile</i> , Chile.
04/2009	I Workshop on New Challenges in Distributed Systems. Conference hosted by Complex Systems Institute, Valparaiso, Chile. Organized by <i>Center for Mathematical Modelling</i> , Chile.
07/2008	II Winter School on Discrete Mathematics. Annual Conference hosted by the <i>Anillo en Redes</i> proyect. Chile.

SKILLS

- Languages:
 - Spanish native
 - English advanced (Michigan Test, TOEIC level 3)
- Mathematical software: Matlab/Octave/SciLab, AMPL/GAMS, gmsh, getfem.
- Advanced programming: Java, C/C++, Perl, Python, Fortran 77/90.
- Databases: PostgreSQL, MySQL, DB4O, MS SQL Server 2000.
- Mathematical programming libraries: GLPK, CPLEX.
- Parallel programming libraries, models and tools: MPI, OpenMP, ScaLAPACK, BLACS.
- Programming GUI's: Eclipse (C/C++, Java, Python), Netbeans (Java), MS Visual Studio 2005 (C/C++, C#).
- Basic networking and system administration knowledge (Linux: Ubuntu/Debian, OpenSuse).

HOBBIES

Amateur Trekking

Board Games