

Cristian Sebastian Rocha

Curriculum Vitae

Education

- 2004-2012 **Delayed PHd Student, Faculty of Science, University of Buenos Aires.,** *University of Buenos Aires.,* Buenos Aires, Argentina.
Title Research in algorithms for protein-protein interaction prediction.
Supervisors PhD. Adrián Turjanski, FCEN - UBA. Phd. Luis Gomez Deniz. Universidad de la Palmas de Gran Canarias.
- 2002 **MSc in Computer Science,** *University of Buenos Aires.,* Buenos Aires, Argentina.
MSc Thesis: Algorithms to identify Genomics Repetitions in Random Sequencing Methods.
Supervisor: PHd. Irene loiseau.
- 2001 **Trainer in Bioinformatics - International Training Course on Bioinformatics (Computational Biology) Applied to Genomic.,** *Oswaldo Cruz Foundation - UNDP/World Bank/WHO Special Programme for Research and Training in Tropical Diseases, TDR,* Rio de Janeiro, Brasil..
<http://www.who.int/tdr/publications/tdrnews/news68/bioinformatics.htm>
- 1995 **Computer Technician.,** *E.M.E.T. No. 8 - Otto Krause.,* Buenos Aires, Argentina.

Skills

- Language **English,** *Good in read, write and talk technician english.*
Spanish, *Native language.*
- Math & Statistics **Lineal Algebra for Computer Graphics, Moleculars and Physics Simulations models. Partial differential equations for Simulation of Physics models. Correlation, Convolution (Fourier) for signal processing in 2D and 3D discrete structures for Image and Molecular processing. Solve nonlinear equations for Machine Learning and Datamining. Optimal and suboptimal solutions for discrete mathematics problems. Geostatistics for region classification. Algorithms for identify structures in pseudo-random generated strings.**
- Software Engineering **Object Oriented Design, Design by Contract ; Unit Testing, Integration Testing, Functional Testing ; DER, UML; Control Version: CVS, SVN, GitHub, Bazaar, Mercurial.**
- Project Management **Critical Path, Gantt, V-Model, Scrum.**
- Programming **Python (10 years), Javascript (5 years), R (5 years), C (15 years), C++ (12 years), CSH (10 years), BASH (10 years), MathLab (5 years), SAS (3 years), Assembler (12 years), Senior.**

	Java (2 years), Haskell (1 year), Ada (1 year), Eiffel (1 year), Tcl (1 year), Visual Basic (3 year), Junior.
Databases	Relational Databases: Postgresql, MySQL, Sqlite, SQLServer; NoSQL: MongoDB; Object Oriented: ZODB - Plone; Directories: LDAP, <i>Modeling, Implementation and management. Query and management languages..</i>
Other Technologies	CISC, SPARK, ARM, GPU, Tesla; HTML, CSS, XSLT, YAML, CSV; IP, IPv6, ICMP, Name, SMTP, AWS, Tomcat, RPC, XML-RPC, Integration from low level to high level abstractions..

Professional Background

- 2009-∞ **Cooperative Entrepreneur**, *Cooperativa de Trabajo Moldeo Interactive Limitada.*, Buenos Aires, Argentina, Secretary del Administrative Council.
Professional Activity Senior Consultant Analyst
Proyectos Moldeo: Main Developer. OpenSource system to process signal and render to visualize information in real time using GPU.
Fiscal Printer on The Cloud: Main Developer. Let to Fiscal Printer connect to SAAS services in the Cloud as Chrome Application.
Argentine Odoo Localization: Main Developer. OpenSource Administrative Software.
Argentine PyMES Observatory and Bologna University: Consultant to develop Pool and Survey Automatization. Project Leader in geo-statistics information publisher for latinamerica industry.
MiERP: SAAS Administrative Software.
SAS ABT Builder: Developer of ABT Builder System for SAS education Argentina.
Senior SAS Consultant: Consultor in Marketing Automation y Banking Intelligent Solutions. Tecnical Reference in the Software Factory of Telecom Personal.
System to search appropriated childrens during the military dictatorship: Main Designer and Developer. For the Argentine Procurator Ministry, and Sadosky Foundation.
- 2009-2010 **Research in Technology for Multidisciplinary Applications.**, *Administración Nacional de la Seguridad Social*, Buenos Aires, Argentina.
Responsible in the agreement between ANSES and the Italian Hospital of Buenos Aires to use ANSES computer capabilities to research in Genomics.
- Feb 2008-Jul 2008 **Project Leader of Semantic product for Plone**, *Inter-cultura Consultora S.A.*, Buenos Aires, Argentina.
Set of Platecom modules for Web Communities with Semantic and Multilingual support, using of Thesaurus and Ontologies structures. <http://www.platecom.com/>
- 2000-2002 **Network and System Administrator**, *University of Buenos Aires, FCEyN, UBA.*, Buenos Aires, Argentina.
Administrator of the Network and diferentes Process Servers. (Irix, Solaris, Tru64, Linux)
- 2000 **Freelance Developer.**
Developer of a Web Accelerator in ActiveX for Internet Explorer.
- 1997-2000 **Informatics Assistant**, *Colegio del Pacífico.*, Buenos Aires, Argentina.
Network Administrator.
- 1996-1997 **Multimedia Developer**, *Laffont Ediciones electrónicas*, Buenos Aires, Argentina.
Main developer of "Verbos Conjugados en Castellano".

1996 **Junior Multimedia Developer**, *LVD sistemas*, Buenos Aires, Argentina.
Programmer in Visual BASIC 3.0 & C++ for Windows 3.x.

Teaching Background

- 1999- **Teaching Assistant**, *Computer Department, Faculty of Science, University of Buenos Aires, Argentina*, Buenos Aires, Argentina.
- I assisted in undergraduate and postgraduate courses for the MSc in Computer Science, the MSc in Geology, and the MSc in Molecular Biology for Medicine of University of Buenos Aires.
 - Some of these course are *Data Structure and Algorithms*, *Computer Organization and Architecture*, *Data Bases*, *Software Engineering*, *Introduction to Computer Science for Geology*, and *Introduction to Bioinformatics*.

Scientific Background

- 2009-2011 **Research and Develop of new Technology Laboratory**, *Gerencia de Sistemas e Inovación Técnica, Administración Nacional de la Seguridad Social*, Buenos Aires, Argentina.
Supervisor: Phd. Mastriani, Mario.
- 2006-2009 **Structural Bioinformatics Laboratory, UBACYT 2008-2010**, *Faculty of Science, University of Buenos Aires.*, Buenos Aires, Argentina.
Supervisor: Phd. Turjanski, Adrián.
- 2°Q 2007 **Visitor of The Roitberg Group, Computational Nano- and Bio- Physical Chemistry**, *Quantum Theory Project, University of Florida*, Gainesville, FL, USA.
Supervisor: Phd. Roitberg Adrián.
- 2004-2012 **High Performance Computational Center Project, PME 2003 00084**, *Faculty of Science, University of Buenos Aires.*, Buenos Aires, Argentina.
Supervisor: Phd. Marshall, Guillermo.
- 2003-2006 **Optimization and Extension of the Applied Genomic Center (CeGA), PME 2003 00137**, *Faculty of Science, University of Buenos Aires.*, Buenos Aires, Argentina.
Supervisor: Phd. Levin, Mariano Jorge.
- 2003-2004 **Functional interaction between antibodies to ribosomal P proteins of Trypanosoma cruzi and cardiac receptors in chronic Chagas heart disease. HHMI 55003682 (Howard Hughes Medical Institute)**, *Faculty of Science, University of Buenos Aires.*, Buenos Aires, Argentina.
Supervisor: Phd. Levin, Mariano Jorge.
- 2002-∞ **Iberoamerican Bioinformatics Network (RIB)**, *Red Iberoamericana de Bioinformática*, Buenos Aires, Argentina.

Publications

Rocha C., Miquel C. , Ortega J. , Mingarro L. , and Gomez A. . Un proyecto de servicio de directorio como solución a la administración de recursos informáticos en ambientes heterogéneos. Poster, sep 2002. AST 2002, Simposio Argentino de Tecnología - 31 JAIIO.

Robledo Germán, Rocha C. , Lorenzi H. , Vazquez M. , and Levin M. . Characterization of the viper's retroelement family of t.cruzi genome. Poster, 2003. Oral Communications and Posters. Microbiología. SAB - SAIB Bariloche 2003. XXXIX ANNUAL MEETING.

Christian Haedo, Michel Mouchart, and Cristian Rocha. Algorithmic detection of specialized agglomerations. *In Progress*, 2013.

Michael Jenikaa, Cristian S. Rocha, and Adrian Turjanski. Jamaica: fast protein docking in gpu. Poster, 2009. Teoría y modelado de sistemas biológicos (TMS), SAB 2009.

Sanjurjo Lucila, Cristian S. Rocha, Sandra Maguid, Gustavo Parisi, and Sebastian Fernandez-Alberti. Protein alignment based on collective vibrational dynamics. Comunicación Oral, 2008. ECCB'08 European Conference on Computational Biology.

Juri Ayub Maximiliano, Edreira Martín, Smulski C. , Rocha C. , and Levin M. . Complexity of p proteins interactions in the ribosomal stalk of t.cruzi. Poster, 2003. Oral Communications and Posters. Microbiología. SAB - SAIB Bariloche 2003. XXXIX ANNUAL MEETING.

Cristian S. Rocha. Propuesta para resolver el problema de predicción de complejos de proteínas usando agentes inteligentes que aprenden usando técnicas de sistemas inmunológicos artificiales. Poster, apr 2009. XI Workshop de Investigadores en Ciencias de la Computación.

Cristian S. Rocha. Sistemas inmunes artificiales para aprender e identificar estructuras de macromoléculas. Laptop session, mar 2009. Workshop "Biología Computacional de Proteínas".

Cristian S. Rocha, Omar Coso, and Adrian Turjanski. Estudio del mecanismo de folding-binding en factores de transcripción mediante dinámica molecular. Poster, 2005. XI Workshop de Investigadores en Ciencias de la Computación.

Cristian S. Rocha and Luis Gomez Déniz. Representación tridimensional de potenciales fisicoquímicos y complementariedad geométrica para el diseño de algoritmos para ensamble de proteínas. Poster, jul 2009. Escuela y Workshop de Ciencias de las Imágenes 2009.

Cristian S. Rocha and Luis Gomez Déniz. A new approach to fast calculation of atomic contact energy for protein-protein interaction prediction. Poster, mar 2010. First International Society for Computational Biology Regional Latin American meeting.

Cristian S. Rocha, Matías A. Nitsche, Mariano G. Lebrero, Marcelo Marti, Andrés Colubri, Adrián G. Turjanski, and Dario Estrin. Algoritmos aplicados a problemas de biología estructural implementados en procesadores vectoriales. Comunicación Oral, 2007. XI Workshop de Investigadores en Ciencias de la Computación.

MSc Thesis director

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- Mayo del 2008 **Identificación de detalles estructurales en proteínas mediante el método de búsqueda de subgrafos isomorfos frecuentes.** Lic. Areum Lee, *Computer Department, Faculty of Science, University of Buenos Aires.*, Buenos Aires, Argentina.
Supervisor: Phd. Turjanski, Adrián; *Codirector:* Lic. Cristian S. Rocha.
- Noviembre del 2009 **Alineamiento de Movimientos Vibracionales para el Estudio Evolutivo de las Dinámicas de Proteínas.** Lic. Lucila Sanjurjo, *Computer Department, Faculty of Science, University of Buenos Aires.*, Buenos Aires, Argentina.
Supervisor: Phd. Sebastian Fernandez Alberti; *Codirector:* Lic. Cristian S. Rocha.