

## Curriculum Vitae

### Gonzalo Rojas Costa

Laboratory of Medical Image Processing  
Department of Neuroradiology  
Institute of Neurosurgery Dr. Asenjo  
Jose Manuel Infante 553, Providencia, Santiago, Chile.  
Tel/Fax: 56-2-2003290  
Mobile: 56-9-97771785  
E-mail: grojas@computer.org  
Imaging Researcher Directory: <http://www.brainmapping.org/directory/index.php?userid=419>

### Education:

- B.S. in Computer Engineering, University of Santiago de Chile, Santiago, Chile, 1990-1996

### Computer Skills:

- *Programming Languages:* C, C++, Pascal, Cobol, Fortran, Assembler (Z80, 80x86 CPU), HTML, php
- *Image and Signal Processing:* IDL, MatLab.
- *Medical Image Analysis related:* Osiris, Cerefy Neuroradiology Atlas, FSL (fMRI, DTI), SPM (fMRI), 3D Slicer, MRlcro, OsiriX, MedINRIA (DTI).
- *Neural Networks related:* NeuroShell 2.
- *Operating System:* Microsoft Windows, UNIX (IRIX, SunOS, Solaris, Linux), MAC OSX

### Publications:

- **Book Chapters**
  - **Gonzalo Rojas Costa**, Carlos Pon Soto, Leopoldo Bertossi, "Presentation of the Chilean Association of Pattern Recognition, and General Description of the State-of-the-art of R&D in Pattern Recognition in Chile", chapter in *Pattern Recognition Advances in Iberoamerica*, A. Grau, Editor, Barcelona Digital, September 2000.
  - Andrea Slachevsky, Jaime Silva, Pablo Reyes, **Gonzalo Rojas**, "Prefrontal cortex and control of behavior: Evidence from neuropsychological study", chapter in *Dynamical Approaches to Attentional Mechanisms: Neurobiological, Clinical and Methodological Trends*, Diego Cosmelli and Francisco Aboitiz, Editors (In Press)

---

### Gonzalo M. Rojas

Av. José Manuel Infante 553, Santiago, Chile  
**Phone:** +(56-2) 2292145 (Home); +(56-9) 97771785 (Mobile); +(56-2) 2003290 (Work)  
**Email:** grojas@computer.org; gmrojas@lauca.usach.cl

- **Peer Reviewed Research Papers**

- L. Rodriguez, P. Vargas, U. Raff, D. Lynch, **G. Rojas**, D. Moxley, J. Newell, "Automated Discrimination and Quantification of Idiopathic Pulmonary Fibrosis from Normal Lung Parenchyma Using Generalized Fractal Dimensions in High-Resolution Computed Tomography Images", *Academic Radiology* **1995**; 2: 10-18
- U. Raff, P. F. Vargas, **G. M. Rojas**, J. H. Simon, A. L. Scherzinger, "Quantitation of T2 Lesion Load in Multiple Sclerosis with Magnetic Resonance Imaging: a Pilot Study of a Probabilistic Neural Network Approach", *Academic Radiology* **1997**; 4: 431-437
- U. Raff, **G. M. Rojas**, M. Hutchinson, J. Simon, "Quantitation of T2 Lesion Load in patients with Multiple Sclerosis: A Novel Semiautomated Segmentation Technique", *Academic Radiology* **2000**; 7: 237-247
- Buggedo G, Bruhn A, Hernández G, **Rojas G**, Varela C, Tapia JC, Castillo L, "Lung Computed Tomography during a Lung Recruitment Maneuver in Patients with Acute Lung Injury", *Intensive Care Medicine* **2003**; 29: 218-225.
- Buggedo T, Guillermo; Bruhn C, Alejandro; Hernández P, Glenn; **Rojas C, Gonzalo**; Aparicio R, Rodrigo; Castillo F, Luis, "Independent lung ventilation in Acute Respiratory Distress Syndrome secondary to Descending Necrotizing Mediastinitis: Role of lung dynamic Computed Tomography", *Revista Médica de Chile* **2003**; 131: 200-208.
- Ulrich Raff, **G. M. Rojas**, Isidro Huete, Michael Hutchinson, "Computer Assessment of Neurodegeneration in Parkinson Disease using data Fusion Techniques with MR images", *Academic Radiology* **2003**; 10: 1036-1044.
- **Gonzalo M Rojas**, Juan C Quintana, Jorge Jer, Sergio Astudillo, Luis Arenas, Hector Araya, "Analog Gamma Camera Digitalization Computer System", *Revista Española de Medicina Nuclear* **2004**; 23(2): 107-114.
- U. Raff, M. Hutchinson, **G.M. Rojas**, I. Huete, "Inversion Recovery MRI in Idiopathic Parkinson disease is a very sensitive tool to assess neurodegeneration in the Substantia Nigra: Preliminary Investigation", *Academic Radiology*, 2006; 13(6): 721-727.
- Rosario Rosales F, **Gonzalo Rojas C**, Marcelo Gálvez M, Pamela Gallardo G, Lautaro Badilla O, "Detection of cortical maps of Motor and visual areas using fMRI", *Revista Chilena de Radiología*, 2006; 12(4): 164-169.
- **G. M. Rojas**, U. Raff, J.C. Quintana, I. Huete, M. Hutchinson, "Image Fusion in Neuroradiology: Three clinical examples including MRI of Parkinson disease", *Computerized Medical Imaging and Graphics*, 2007; 31(1): 17-27.

---

**Gonzalo M. Rojas**

Av. José Manuel Infante 553, Santiago, Chile

**Phone:** +(56-2) 2292145 (Home); +(56-9) 97771785 (Mobile); +(56-2) 2003290 (Work)

**Email:** grojas@computer.org; gmrojas@lauca.usach.cl

- **G. M. Rojas**, U. Raff, P. Gonzalez, R. Jaimovich, J. C. Quintana, "Automated quantitative assessment of left ventricular mass using transaxial Tc-99m Sestamibi SPECT imaging", submitted to *Nuclear Medicine and Biology*, January 2007
- Cisternas J, Asahi T, Gálvez M, **Rojas G**, Bravo E, "Development and implementation of a tractography software", *Revista Chilena de Radiología* (accepted for publication, January 2007).
- **Rojas Costa GM**, Cisternas Elgueta JE, Gálvez Moya MO, Asahi Kodama T, Bravo Castro EF, "Tractography Software (DTI.py): A validation", *Revista Chilena de Radiología* (accepted for publication, January 2007).
- **Rojas Costa GM**, Cordovez Maira JA, Gálvez Moya MO, Asahi Kodama T, Bravo Castro EF, "Obtaining Talairach coordinates from visual area cortical maps with functional MRI (fMRI)", *Revista Chilena de Radiología* (accepted for publication, January 2007).
- **Rojas Costa GM**, Cordovez Maira JA, Gálvez Moya MO, Cisternas Elgueta JE, Asahi Kodama T, Bravo Castro EF, "Combined use of functional magnetic resonance imaging and tractography to select specific white matter fibers", *Revista Chilena de Radiología* (accepted for publication, January 2007).

- **Abstracts**

- M. Meléndez, **G. Rojas**, P. Vargas, U. Raff and J. Newell, "Neural Networks and Vectorial Spaces in the diagnosis of Idiopathic Pulmonary Fibrosis using High Resolution Computer Tomography Images", *Proc. X Southern Workshop on Solid State Physics*, Concepción, Chile, April 23-27 1996 (In Spanish).
- **G. M. Rojas**, U. Raff, P. F. Vargas, M. Meléndez, J. H. Simon and A. L. Scherzinger, "Method to Quantify Multiple Sclerosis Lesions Using Nuclear Magnetic Resonance Images", *Proc. IX International Symposium in Informatics Application Infonor '96*, Antofagasta, Chile, November 18-22 1996 (In Spanish).
- U. Raff, **G. Rojas**, P. Vargas, J. Simon, and I. Huete, "Operator Independent Quantitation of Total Volume of Multiple Sclerosis Lesions Using MR Images", *Proc. 51 Chilean Congress of Neurology, Psychiatry and Neurosurgery*, Viña del Mar, Chile, November 7-9 1996. *Revista Chilena de Neuro-Psiquiatría* **1996**; 34 (Supl 1): pp. 155. (In Spanish).
- U. Raff, **G. Rojas**, P. Vargas, M. Meléndez, I. Huete and J. Simon, "Operator independent Quantitation of total T2 lesion load in multiple sclerosis by MR imaging", *Proc. XI International Symposium and Exhibition of Computer Assisted Radiology CAR '97*, Berlin, Germany, June 25-28 1997.

---

**Gonzalo M. Rojas**

Av. José Manuel Infante 553, Santiago, Chile

**Phone:** +(56-2) 2292145 (Home); +(56-9) 97771785 (Mobile); +(56-2) 2003290 (Work)

**Email:** grojas@computer.org; gmrojas@lauca.usach.cl

- **Gonzalo M. Rojas**, Michael Hutchinson and Ulrich Raff, "Parkinson Disease Characterization Method Using Nuclear Magnetic Resonance Images: Preliminary results", *Proc. X International Symposium in Informatics Application Infonor '97*, Antofagasta, Chile, October 27-31 1997 (In Spanish).
- **Gonzalo M. Rojas**, "Design and Development of an Information System for a Healthcare Management Organization", *Proc. IV Argentinean Congress of Computer Science CACIC '98*, Neuquén, Argentina, October 26-30 1998 (In Spanish).
- **Gonzalo M. Rojas** and Ulrich Raff B, "Image Fractal Compression and Other Compression Methods. Description, Comparison and Practical Applications", Tutorial and paper presented in *Fourth Ibero-American Symposium of Pattern Recognition SIARP '99*, Havana, Cuba, March 22-27 1999 (In Spanish).
- **Gonzalo M. Rojas**, "Design and Development of an Information System for a Healthcare Management Organization. An upgrade", *Proc. Toward the Electronic Health Record in Latin America and Caribbean PEP '99*, Rio de Janeiro, Brazil, March 27-31 1999 (In Spanish).
- **G. M. Rojas Costa**, S. H. Astudillo Gomez, J. C. Quintana Fresno and J. G. Jer Banda, "A New Nuclear Medicine Acquisition and Image Processing System", *Proc. 21 International Congress of Radiology ICR 2000*, Buenos Aires, Argentina, September 4-8 2000.
- **Gonzalo Rojas Costa**, Carlos Pon Soto and Leopoldo Bertossi, "Presentation of the Chilean Association of Pattern Recognition, and General Description of the State of the Art of R&D of Pattern Recognition in Chile", *1<sup>st</sup> Ibero-American Forum of Forms Recognition and Image Analysis*, Barcelona, Spain, September 2000 (In Spanish).
- G Bugedo, A Bruhn, JC Tapia, C Varela, G Hernández, L Castillo and **G Rojas**, "Lung Recruitment Maneuvers Improve Oxygenation and Pulmonary Mechanics on Patients with Acute Respiratory Failure", *Proc. XVIII Chilean Congress of Intensive Medicine*, Puyehue, Chile, November 1-4 2000 (In Spanish). **First prize to the best research paper (prize M.D. Jorge Valdebenito Vancky)**.
- G Bugedo, A Bruhn, C Varela, JC Tapia, G Hernández, L Castillo and **G Rojas**, "Lung Computed Tomography During an Alveolar Recruitment Maneuver Gives Morphologic and Functional Dynamic Information on Patients with Acute Respiratory Failure", *Proc. XVIII Chilean Congress of Intensive Medicine*, Puyehue, Chile, November 1-4 2000 (In Spanish).
- Bugedo G, Bruhn A, Hernández G, **Rojas G**, Varela C, Tapia JC, Castillo L, "Lung Computed Tomography during a Lung Recruitment Maneuver in Patients with Acute Respiratory Failure. Mechanisms and clinical usefulness", *Proc. I International Symposium on Intensive Care and Emergency Medicine for Latin America*, Sao Paulo, Brazil, June 26-29 2001.

---

**Gonzalo M. Rojas**

Av. José Manuel Infante 553, Santiago, Chile

**Phone:** +(56-2) 2292145 (Home); +(56-9) 97771785 (Mobile); +(56-2) 2003290 (Work)

**Email:** grojas@computer.org; gmrojas@lauca.usach.cl

- G Bugedo, A Bruhn, **G Rojas**, P Zúñiga, JC Tapia, G Hernández, L Castillo, “High PEEP Levels Produce Overdistension in Patients with Acute Respiratory Distress Syndrome”, *Proc XIX Chilean Congress of Intensive Medicine*, Pucón, Chile, October 31-November 3 2001 (In Spanish).
- G Bugedo, A Bruhn, **G Rojas**, P Zúñiga, JC Tapia, G Hernández, L Castillo, “PEEP Levels 10 to 20 cmH<sub>2</sub>O Improve Alveolar Recruitment During Low Tidal Volume Ventilation in ARDS Patients”, *Proc. American Thoracic Society 98<sup>th</sup> International Conference ATS 2002*, Atlanta, USA, May 17-22 2002.
- **G.M. Rojas**, J.C. Quintana, E. Olea, H. Araya, J.G. Jer, “Computer System for Digitalization of Analog Gamma Cameras: An Upgrade”, *Proc. 8<sup>th</sup> Congress of the World Federation of Nuclear Medicine & Biology*, Santiago, Chile, September 29 - October 4 2002.
- G Bugedo, C Romero, A Bruhn, **G Rojas**, JC Tapia, G Hernández, L Castillo, “Role of Tidal Volume and PEEP on Lung Hyperinflation during Severe Respiratory Failure”, *Proc. American Thoracic Society 99<sup>th</sup> International Conference ATS 2003*, Seattle, Washington, USA, May 16-21 2003.
- **Gonzalo M. Rojas**, Ulrich Raff, Isidro Huete, Michael Hutchinson, “Visual Assessment of Neurodegeneration in Patients with Parkinson Disease and Parkinsonism using MR Images and Data Fusion Techniques”, *Proc. XI Pan-American Congress of Neurology*, Santiago, Chile, October 8-11 2003. *Revista Chilena de Neuro-Psiquiatría* **2003**; 41 (Supl 1): pp.105.
- Renato Salinas, Ulrich Raff, **Gonzalo Rojas**, “Symmetric 1-D Wavelets for Iris Recognition: Preliminary Results”, *Proc. First IEEE Latin American Conference on Robotics and Automation LCRA 2003*, Santiago, Chile, November 24-26 2003.
- **Gonzalo M. Rojas**, Patricio González, Rodrigo Jaimovich, Ulrich Raff, “Tomographic Reconstruction Methods of Myocardial SPECT images: an evaluation”, *XX Alasbimn Congress*, Punta del Este, Uruguay, December 4-7 2005.
- Andrea Slachevsky, Marcela Peña, Carolina Pérez, **Gonzalo Rojas**, Eduardo Bravo, Patricia Alegría, “Neuroanatomical basis of behavioural disturbances in patients with prefrontal lesions”, *World Federation of Neurology Research Group on Aphasia and Cognitive Disorders Conference*, Cambridge, England, June 30 – July 2 2005.
- Galvez M, Cisternas J, **Rojas G**, Badilla L, Bravo E, Sordo G, Cordovez J, Asahi T. “Characterization of the alteration of the signal in conventional sequences and diffusion tensor in high grade gliomas”, *Silan Congress 2006*, June 5-9 2006, San Juan, Puerto Rico.
- Galvez M, Valencia A, Rivera R, Morales H, Badilla L, Bravo E, Sordo G, Cordovez J, Peldoza M, Asahi T, **Rojas G**. “Characterization of the hemodynamic response in cerebral aneurysms using a fluid dynamics computer model”, *Silan Congress 2006*, June 5-9 2006, San Juan, Puerto Rico.

---

**Gonzalo M. Rojas**

Av. José Manuel Infante 553, Santiago, Chile

**Phone:** +(56-2) 2292145 (Home); +(56-9) 97771785 (Mobile); +(56-2) 2003290 (Work)

**Email:** grojas@computer.org; gmrojas@lauca.usach.cl

- M. Galvez, E. Bravo, A. Valencia, R. Rivera, H. Morales, L. Badilla, G. Sordo, T. Asahi, **G. Rojas**, M. Peldoza, "Hemodynamic characterization of Ruptured and unruptured cerebral aneurysms using computer fluid dynamics", *ESNR 06 31<sup>st</sup> Congress & 15<sup>th</sup> Advanced Course*, Geneva, Switzerland, 13-16 September 2006. *Neuroradiology* 2006; 48 (Suppl 2): 124
- R Rosales, **G Rojas**, M Gálvez, J Cordovez, L Badilla, E. Bravo, "Detection of cortical maps of motor and visual areas using fMRI", *Proc. Chilean Congress of Radiology 2006*, Viña del Mar, Chile, October 13-15 2006.
- R Rosales, **G Rojas**, M Gálvez, J Cordovez, T Asahi, L Badilla, "Cortical mapping of receptive and expressive language areas using functional MRI with BOLD technique", *Proc. Chilean Congress of Radiology 2006*, Viña del Mar, Chile, October 13-15 2006. **First prize to the best research poster.**
- **Gonzalo Rojas C**, Rosario Rosales F, Marcelo Gálvez M, Jorge Cordovez M, Gabriel Sordo J, Takeshi Asahi K, Lautaro Badilla O, Eduardo Bravo C, "Use of functional MRI to obtain the cortical mapping of eloquent areas in patients with cerebral AVM", *LXI Chilean Congress of Neurology, Psychiatry and Neurosurgery*, La Serena, Chile, November 2-4 2006. *Revista Chilena de Neuro-Psiquiatría* 2006; 44 (Supl 1): 57.
- **Gonzalo Rojas**, Jaime Cisternas, Marcelo Gálvez, Takeshi Asahi, Lautaro Badilla, "A new software tool for DTI processing and computation of anisotropy indices: a description and preliminary validation", *Symposium Vision by Brains and Machines VBM2006*, Montevideo, Uruguay, November 13-17 2006.
- **G. Rojas**, U. Raff, P. González, R. Jaimovich, "Automated detection of left ventricular borders and calculation of myocardial mass using non-reoriented Tc-99m Sestamibi SPECT images", *Proc. II Chilean Congress of Nuclear Medicine*, Reñaca, Chile, November 10 2006. *Alasbimn Journal* 9(35): January 2007
- M. Galvez, J. Cisternas, T. Asahi, **G. Rojas**, L. Badilla, E. Bravo, G. Sordo, C. Okuma, J. Cordovez, D. Maldini, "Normal myelinization patterns in children by means of diffusion tensor imaging", *XIX Congress of the Ibero-latinoamerican Society of Neuroradiology SILAN 2007*, Sevilla, Spain, April 16-20 2007. **First prize to the best paper (prize M.D. Juan Taveras).**
- **G. Rojas**, J. Cisternas, T. Asahi, M. Gálvez, E. Bravo, "A new software for DTI processing, computation of anisotropy indices, and Tractography: Description and Validation of the technique", *Jornadas Chilenas de Ingeniería Biomédica*, October 10-12 2007.
- J. Cisternas, T. Asahi, M. Gálvez, **G. Rojas**, E. Bravo, "Noise reduction of diffusion weighted images using the Total Variation method", *Jornadas Chilenas de Ingeniería Biomédica*, October 10-12 2007.

---

**Gonzalo M. Rojas**

Av. José Manuel Infante 553, Santiago, Chile

**Phone:** +(56-2) 2292145 (Home); +(56-9) 97771785 (Mobile); +(56-2) 2003290 (Work)

**Email:** grojas@computer.org; gmrojas@lauca.usach.cl

- **G. Rojas**, U. Raff, P. González, R. Jaimovich, J. C. Quintana, "Computation of Left Ventricular Mass from transaxial Tc-99m sestamibi SPECT images without reorientation", *Jornadas Chilenas de Ingeniería Biomédica*, October 10-12 2007.
- **Rojas Costa GM**, Cordovez Maira JA, Gálvez Moya MO, Asahi Kodama T, Bravo Castro EF, "Obtaining Talairach coordinates from visual area cortical maps with functional MRI (fMRI)", *Proc. Chilean Congress of Radiology 2007*, Viña del Mar, Chile, November 1-4 2007. **First prize to the best research paper.**
- Cisternas J, Asahi T, Gálvez M, **Rojas G**, Bravo E, "Development and implementation of a tractography software", *Proc. Chilean Congress of Radiology 2007*, Viña del Mar, Chile, November 1-4 2007.
- **Rojas Costa GM**, Cisternas Elgueta JE, Gálvez Moya MO, Asahi Kodama T, Bravo Castro EF, "Tractography Software (DTI.py): A validation", *Proc. Chilean Congress of Radiology 2007*, Viña del Mar, Chile, November 1-4 2007.
- **Rojas Costa GM**, Cordovez Maira JA, Gálvez Moya MO, Cisternas Elgueta JE, Asahi Kodama T, Bravo Castro EF, "Combined use of functional magnetic resonance imaging and tractography to select specific white matter fibers", *Proc. Chilean Congress of Radiology 2007*, Viña del Mar, Chile, November 1-4 2007.
- **Rojas Costa G**, Cordovez Maira J, Gálvez Moya M, Asahi Kodama T, Bravo Castro E, "Combined use of functional magnetic resonance imaging and tractography to select specific white matter fibers: a clinical case", *LXII Chilean Congress of Neurology, Psychiatry and Neurosurgery*, Temuco, Chile, November 1-3 2007. *Revista Chilena de Neuro-Psiquiatría* 2007; 45 (Supl 1): S16.
- M. Galvez M, **G. Rojas C**, E. Bravo C, C. Okuma P, J. Cordovez M, J.G. Sordo J, "Tractography in cortical malformations: Schizencephaly and connectivity. Clinical case", *LXII Chilean Congress of Neurology, Psychiatry and Neurosurgery*, Temuco, Chile, November 1-3 2007. *Revista Chilena de Neuro-Psiquiatría* 2007; 45 (Supl 1): S11.
- Cordovez Maira J, **Rojas Costa G**, Gálvez Moya M, Asahi Kodama T, Bravo Castro E, "Brodmann Areas (BA) and functional MRI (fMRI): A study of patients with cerebral arteriovenous malformations", *LXII Chilean Congress of Neurology, Psychiatry and Neurosurgery*, Temuco, Chile, November 1-3 2007. *Revista Chilena de Neuro-Psiquiatría* 2007; 45 (Supl 1): S54.
- **G. Rojas**, U. Raff, M. Gálvez, P. Chaná, X. Fassler, E. Bravo, "Magnetic Resonance Imaging in Progressive Supranuclear Palsy (PSP) can unequivocally differentiate PSP from Idiopathic Parkinson disease", *LXII Chilean Congress of Neurology, Psychiatry and Neurosurgery*, Temuco, Chile, November 1-3 2007. *Revista Chilena de Neuro-Psiquiatría* 2007; 45 (Supl 1): S17.

---

**Gonzalo M. Rojas**

Av. José Manuel Infante 553, Santiago, Chile

**Phone:** +(56-2) 2292145 (Home); +(56-9) 97771785 (Mobile); +(56-2) 2003290 (Work)

**Email:** grojas@computer.org; gmrojas@lauca.usach.cl

- J. Cisternas, T. Asahi, M. Gálvez, **G. Rojas**, E. Bravo, "Development and implementation of a tractography software", *LXII Chilean Congress of Neurology, Psychiatry and Neurosurgery*, Temuco, Chile, November 1-3 2007. *Revista Chilena de Neuro-Psiquiatría* 2007; 45 (Supl 1): S12.
- **G. Rojas Costa**, J. Cisternas Elgueta, T. Asahi Kodama, M. Gálvez Moya, E. Bravo Castro, "Diffusion imaging postprocessing software (DTI.py): A validation of clinical cases of Multiple Sclerosis, Glioblastoma, Trauma", *LXII Chilean Congress of Neurology, Psychiatry and Neurosurgery*, Temuco, Chile, November 1-3 2007. *Revista Chilena de Neuro-Psiquiatría* 2007; 45 (Supl 1): S10.
- Marcelo Gálvez, Eduardo Bravo, Lautaro Badilla, Jorge Cordovez, Aarón Vidal, **Gonzalo Rojas**, "Morphological changes of the Brain Surface using 3D Magnetic Resonance in Cortical Dysplasias", *LXII Chilean Congress of Neurology, Psychiatry and Neurosurgery*, Temuco, Chile, November 1-3 2007. *Revista Chilena de Neuro-Psiquiatría* 2007; 45 (Supl 1): S10.
- **Other Documents**
  - Fernando Martín Sánchez, *Spain*; Ricardo Martínez, *Venezuela*; Nora Oliveri, *Argentina*; **Gonzalo Rojas Costa**, *Chile*; Valerio Yacubsohn, *Argentina*; Isabel Ayala, *Scientific Translator* (reviewers of the Spanish translation of the document), "IMIA Code of Ethics for Health Information Professionals", International Medical Informatics Association, April 2003.

### **Invited Presentations:**

- **Gonzalo M. Rojas** and Ulrich Raff B, "Image Fractal Compression. Description and Practical Applications", Tutorial presented in *XI International Symposium in Informatics Application Infonor '98*, Antofagasta, Chile, November 9-13 1998.
- **Gonzalo M. Rojas** and Ulrich Raff B, "Image Fractal Compression and Other Compression Methods. Description, Comparison and Practical Applications", Tutorial and paper presented in *Fourth Ibero-American Symposium of Pattern Recognition SIARP '99*, Havana, Cuba, March 22-27 1999.
- **Gonzalo M. Rojas**, "Image Processing and Medical Informatics", Tutorial presented in *National Congress of Computer Science CCBol 2001*, Cobija, Bolivia, September 2001.
- **Gonzalo M. Rojas**, "Image Compression", Conference to be presented in *National Congress of Computer Science CCBol 2001*, Cobija, Bolivia, September 2001.
- **Gonzalo M. Rojas**, "PACS: Basic Concepts", Course *Updates in Radiology*, Chilean Society of Radiology, Santiago, Chile, March 15-16 2002.

---

#### **Gonzalo M. Rojas**

Av. José Manuel Infante 553, Santiago, Chile

**Phone:** +(56-2) 2292145 (Home); +(56-9) 97771785 (Mobile); +(56-2) 2003290 (Work)

**Email:** grojas@computer.org; gmrojas@lauca.usach.cl



- **Gonzalo M. Rojas**, “Image Processing and Medical Informatics: A summary”, Chilean Computing Week 2002, Copiapó, Chile, November 4-9 2002.
- **Gonzalo M. Rojas**, “Images and Medical Informatics: An Introduction”, Conference presented in *InfoUDA 2003*, Copiapó, Chile, August 26-29 2003.
- **Gonzalo M. Rojas**, “Digital Image Processing Techniques in Medicine: Its use in Parkinson Disease”, Conference presented in *XI Pan-American Congress of Neurology*, Santiago, Chile, October 8-11 2003.
- **Gonzalo M. Rojas**, “Image Fusion: Its use in Nuclear Medicine”, Conference presented in 1<sup>st</sup> Virtual Congress of Nuclear Medicine, Veracruz, Mexico, May 12-15 2004.
- **Gonzalo M. Rojas**, “Image Fusion: Its use in Nuclear Medicine”, Conference presented in First Chilean Congress of Nuclear Medicine, Santiago, Chile, November 4-6 2004.
- **Gonzalo M. Rojas**, “Image Fusion: Different Methods and Clinical Use”, Conference presented in Summer School in Medical Imaging, Santiago, Chile, December 2-4 2004.
- Ulrich Raff, **Gonzalo Rojas**, “Imaging Parkinson Disease Using MRI”, Conference presented in Summer School in Medical Imaging, Santiago, Chile, December 2-4 2004.
- **Gonzalo Rojas**, “fMRI: Introduction, Postprocessing and 3D”, Conference presented in Chilean Congress of Neurology, Psychiatry and Neurosurgery, Pucón, Chile, November 17-19 2005.
- **Gonzalo Rojas**, “fMRI: Introduction, Post-processing, and 3D visualization”, Conference presented in 2<sup>nd</sup> Workshop on Computer Assisted Diagnosis and Surgery, Santiago, Chile, March 8-10 2006.
- **Gonzalo Rojas**, “Image Fusion in Neuroradiology: Different Methods and Clinical Use”, Refresher Course in RSNA 2007, Chicago, USA, November 26 2007.

### **Teaching Experience (Courses):**

- “Introduction and Intermediate Programming and Analysis with IDL”, Center for Space Studies, University of Chile, November 29 2004 - May 30 2005.

### **Editorial Committee Member:**

- “Informedica Journal”, Medical Informatics Foundation, October 2002 - present.  
[www.informedicajournal.org](http://www.informedicajournal.org)

---

### **Gonzalo M. Rojas**

Av. José Manuel Infante 553, Santiago, Chile

**Phone:** +(56-2) 2292145 (Home); +(56-9) 97771785 (Mobile); +(56-2) 2003290 (Work)

**Email:** grojas@computer.org; gmrojas@lauca.usach.cl

### **Work Experience (academic and professional):**

- **Researcher - Informatics and Computer Science Service, University of Santiago de Chile (09/1987 - 06/1991). Research Topic: Computer Viruses.**
- **Research Assistant - Department of Physics, University of Santiago de Chile (July 1991 – March 2000)**  
*Reference: Dr. Rer. Nat. Patricio Vargas, Ulrich Raff, PhD; email: uraff@lauca.usach.cl*  
**Research Topic:** Medical Image Processing and Analysis.  
**Job Description:** Worked in various research projects related with detection and quantitation of diseases of different organs in the human body, using medical images (Computer Tomography, Magnetic Resonance Imaging, etc.), using automatic or semi-automatic algorithms. The results of these projects have been published and presented in various international journals and national and international specialized meetings.
- **System Manager - SALUMAX Company. CEO: Franz Schenkel (September 1996 – August 1999)**  
**Main projects:** i) Creation and organization of the Computer Department, including recruiting human resources and computer platform, ii) Project leader of design and implementation of an Administrative/medical information system and CPR (Computational Patient Record), for an HMO operation. This system (first HMO information system of this type designed in Latin America) was presented in CACIC '98 and PEP '99 congresses (Neuquén, Argentina; Rio de Janeiro, Brazil), iii) Search and evaluation of the newest technology, in Chile and other countries, for its use in SALUMAX.
- **Researcher – School of Medicine, Catholic University of Chile (September 1999 – February 2003)**  
*Reference: Dr. Isidro Huete MD, email: ihuete@med.puc.cl; Dr. Juan Carlos Quintana MD, email: jcquinta@med.puc.cl*  
**Research Topic:** Medical Image Processing and Analysis.  
**Job Description:** Worked in various research and development projects related to visualization, detection and quantification of human diseases using CT and Nuclear Medicine images. Main projects: i) Update of nuclear medicine acquisition systems and development of a new image processing and quantification software, ii) Lung recruitment maneuvers benefits with Computed Tomography images (M. D. Guillermo Buggedo)
- **Main co-researcher and Consultant in project “Design of an Archiving and Communication System of Digital Images (PACS) for the Peruvian Health System”, Catholic University of Peru and Edgardo Rebagliati National Hospital (May 2000 – October 2001)**

---

#### **Gonzalo M. Rojas**

Av. José Manuel Infante 553, Santiago, Chile

**Phone:** +(56-2) 2292145 (Home); +(56-9) 97771785 (Mobile); +(56-2) 2003290 (Work)

**Email:** grojas@computer.org; gmrojas@lauca.usach.cl

- **Research Assistant - Department of Physics, University of Santiago de Chile (April 2002 - Present)**

*Reference: Ulrich Raff, PhD, email: uraff@lauca.usach.cl*

**Research Topic:** Medical Image Processing and Analysis.

**Job Description:** Similar as above (between July 1991 – March 2000)

**Other R&D project:** Signal Processing and Analysis to define determination strategies of ultrasonic parameters in a SAG mill (Semi-Autogenous Grinding Mill; mills used in a mining company) related project (Ultrasound Laboratory, Department of Physics, University of Santiago de Chile - Codelco. Luis Gaete, PhD).

- **Researcher in Laboratory of Medical Imaging Processing, Neuroradiology Department, Institute of Neurosurgery Dr. Asenjo (January 2005 - Present)**

*Reference: Dr. Marcelo Gálvez MD; email: mgalvez@med.uchile.cl*

**Research Topics:** Medical Image Processing and Analysis, Visualization, MRI, fMRI, Tractography (DTI)

### **Professional Societies:**

- IEEE Computer Society, USA (Technical Committee on Computational Medicine, Technical Committee on Pattern Analysis and Machine Intelligence)
- Chilean Computer Science Society (SCCC).
- Ibero-American Committee on Pattern Recognition.
- International Medical Informatics Association (IMIA), Correspondent Status member (WG7: Biomedical Pattern Recognition).
- Chilean Society of Neurology, Psychiatry and Neurosurgery (Workgroup of Dementia).
- Chilean Academy of Sciences, category of Biomedicine.

### **Postgraduate Courses:**

- “Artificial Intelligence Perspectives”, International School of Season 1987. Science and Technology for Development. University of Chile, Santiago, Chile (12/01/1987 - 23/01/1987)
- “Digital Electronics Basics”, Summer School 1988 “Entrance to the Third Millennium”, University of Santiago de Chile, Santiago, Chile (04/01/1988 - 08/01/1988)
- “Digital Image Processing”, Department of Computer Science, University of Santiago de Chile, Santiago, Chile. Professor: Ph.D. Fernando Contreras (16/03/1992 - 31/07/1992).
- “Medical Physics”, School of Medicine, Catholic University of Chile, Santiago, Chile. Professor: Ph.D. Patricio Vargas (04/07/1994 - 2/12/1994)

---

### **Gonzalo M. Rojas**

Av. José Manuel Infante 553, Santiago, Chile

**Phone:** +(56-2) 2292145 (Home); +(56-9) 97771785 (Mobile); +(56-2) 2003290 (Work)

**Email:** grojas@computer.org; gmrojas@lauca.usach.cl

- Symposium “Science and Technology for Development”, Chilean Scientific Society, ECLAC, Santiago, Chile (22/08/1996)
- “Artificial Neural Networks. An Introduction”, Infonor '98, Antofagasta, Chile. Professors: Enrique Cabello Pardos, PhD, Luis Alonso Romero, PhD (10/11/1998 – 11/11/1998)
- “Bio Medical Image Analysis: Fundamental Concepts and Techniques”, ICPR 2000, Barcelona, Spain. Professor: Mostafa Analoui, PhD (03/09/2000 – 07/09/2000)
- Intensive Course “Diagnosis and Therapy Planning with the help of Images”, Heidelberg Center for Latin America, Santiago, Chile. Professor: Dr. sc. Hum. Hans-Peter Meinzer (11/03/2002 – 12/03/2002, 18/03/2002 – 19/03/2002)
- “Quantification in Nuclear Medicine: Reality and Myth”, Catholic University Clinical Hospital, Santiago, Chile. 8<sup>th</sup> Congress of the World Federation of Nuclear Medicine & Biology. Prof. Mariana Cabrejas (29/09/2002)
- “PET Imaging in the Clinical Environment”, Military Hospital of Santiago, Santiago, Chile. Professors: Dr. Heiko Schoder, Dr. Myung-Chul Lee (16/04/2004)
- “Actualizations in neurodegenerative diseases, dementia and extrapyramidal diseases”, Clínica Las Condes, Santiago, Chile (21/04/2005 – 22/04/2005)
- “Course of Radiologic Neuroanatomy”, Institute of Neurosurgery Dr. Asenjo, Santiago, Chile (5/09/2006 – 17/10/2006)
- CETRAM Symposium: “Parkinson’s Disease and Movement Disorders”, Centro Estudio de Trastornos del Movimiento, University of Santiago de Chile, Santiago, Chile (13/10/2006 – 14/10/2006)
- Seminar “Diffusion by Magnetic Resonance: Technique and Applications”, Institute of Neurosurgery Dr. Asenjo, Santiago, Chile (7/12/2007)

### **Other Conferences or Meetings:**

- Congress “Toward the Electronic Health Record in Latin America and Caribbean”, PEP '99, Rio de Janeiro, Brazil (27/03/1999 - 31/03/1999)
- Meeting: “Chile Science 2000. A necessary meeting”, National Commission of Scientific and Technologic Research (CONICYT), Santiago, Chile (14/06/2000 - 16/06/2000)
- 15<sup>th</sup> International Conference on Pattern Recognition, ICPR 2000, Barcelona, Spain (03/09/2000 – 08/09/2000)

---

### **Gonzalo M. Rojas**

Av. José Manuel Infante 553, Santiago, Chile

**Phone:** +(56-2) 2292145 (Home); +(56-9) 97771785 (Mobile); +(56-2) 2003290 (Work)

**Email:** grojas@computer.org; gmrojas@lauca.usach.cl

- “1<sup>st</sup> Ibero-American Forum of Pattern Recognition and Image Processing FORO 2000”, Polytechnic University of Catalunya, Barcelona, Spain (08/09/2000)
- 5<sup>th</sup> Ibero-American Symposium on Pattern Recognition, SIARP 2000, Lisbon, Portugal (11/09/2000 – 13/09/2000)
- 18<sup>th</sup> International EuroPACS Conference, Graz, Austria (21/09/2000 – 23/09/2000)
- First CYTED Symposium of “Telemedicine and Medical Informatics”, Santiago, Chile (20/06/2001 – 22/06/2001)
- International Workshop: “Telemedicine and Health Management”, Universidad del Desarrollo, Santiago, Chile (27/08/2001)

## **References:**

<b>Name</b>	<b>Position</b>	<b>Address</b>	<b>Telephone</b>	<b>e-mail</b>
Isidro Huete, MD	Radiology Department, School of Medicine, Catholic University of Chile	Marcoleta 367, P.O. Box 114-D, 833-0024 Santiago, Chile	+(562) 354-3486	ihuete@med.puc.cl
Juan C. Quintana, MD	Chief Nuclear Medicine Section, School of Medicine, Catholic University of Chile	Marcoleta 367, P.O. Box 114-D, 833-0024 Santiago, Chile	+(562) 354-6489	jquintaf@puc.cl, jcquinta@med.puc.cl
Ulrich Raff, PhD	Professor, Department of Physics, School of Science, University of Santiago de Chile	Av. Ecuador 3493, P.O. Box 307 Stgo 2, 917-0124 Estación Central, Santiago, Chile	+(562) 776-3322 ext. 213	uraff@usach.cl
Dr. Rer. Nat. Patricio Vargas	Professor, Department of Physics, Universidad Técnica Federico Santa María	Av. España 1680, Casilla 110-V, Valparaíso, Chile	+(5632) 654-555	pvgargas@fis.utfsm.cl
Pilar Orellana, MD	Nuclear Medicine Section, School of Medicine, Catholic University of Chile	Marcoleta 367, P.O. Box 114-D, 833-0024 Santiago, Chile	+(562) 354-6488	pilar@med.puc.cl
Guillermo Buggedo, MD	Intensive Medicine Program, Professor, Department of Anesthesiology, School of Medicine, Catholic University of Chile	Marcoleta 367, P.O. Box 114-D, 833-0024 Santiago, Chile	+(562) 354-3972	bugedo@med.puc.cl
Marcelo Gálvez, MD	Neuroradiology Department, Institute of Neurosurgery Dr. Asenjo.	Av. José M. Infante 553, 750-0691 Providencia, Santiago, Chile	+(562) 200-3371	mgalvez@med.uchile.cl

---

## **Gonzalo M. Rojas**

Av. José Manuel Infante 553, Santiago, Chile

**Phone:** +(56-2) 2292145 (Home); +(56-9) 97771785 (Mobile); +(56-2) 2003290 (Work)

**Email:** grojas@computer.org; gmrojas@lauca.usach.cl