

Alejandro Díaz-Caro

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Birth date and place: February 6, 1981, Corrientes, Argentina
Nationality: Argentinean • Status: Married

Education

Computer Science (five-year degree with thesis)
(Equivalent of a Masters degree in the EU system) December 21, 2007
Grade point average: 8.57 out of 10 (honours)
Universidad Nacional de Rosario, Rosario, Argentina
Advisors: Dr. Manuel Gadella (UVa-Spain) and Dr. Pablo Martínez López (UNQ-Argentina)
Research Topic: *Quantum Lambda Calculus*
Thesis: *Adding Measurement to van Tonder's Calculus*

Electronics Technician
(General education plus one year in Electronics) December, 1999
School of Technician Education "General Francisco Ramírez", Paraná, Argentina

Teaching

- In the first semester of 2008 I am a Graduate Teaching Assistant at Basic Sciences School, UNR. I give exercise classes for the Algebra and Geometry I course (Vectors, Lineal geometry of plane and space, Conics, Surfaces, Induction, Combinatory analysis, Newton binomial, Complex numbers, Polynomials.)
 - In the second semester of 2007 I was an Undergraduate Teaching Assistant at the Department of Computer Science, UNR. I gave exercise classes for the Mathematical Analysis IV course (Sequences and series, Power series, Ordinary differential equations, Recursions, Binary relations, Group theory, Lattices, Introduction to category theory.)
- Both positions were obtained through official competitive exams organised by the university.

Publications

- A. Díaz-Caro, P. Arrighi, M. Gadella and J. Grattage, *Measurements and confluence in quantum lambda calculi with explicit qubits*, Accepted by QPL'08. (also in arXiv:0806.2447)
- A. Díaz-Caro and M. Gadella, *A Discussion on the Teleportation Protocol for States of N Qubits*, SECYT-FCEIA, Technical Report ID 05/02 (2005). (also in arXiv:quant-ph/0505009).

Conference Posters

- A. Díaz-Caro. *Generalización del Algoritmo Cuántico de Teleportación*, VII WICC, p1-5, ISBN: 950-665-337-2 (2005)
- A. Díaz-Caro. *On the Teleportation of N-qubit States*, Quantum Symposium 2005, UNC, (2005).

Courses and seminars given

- Seminar "**Adding Measurement to van Tonder's Calculus**", *Quantum Sandwich (informal meeting of the team members)*, QCG-CAPP group, LIG, France, Mar 2008 (Length: 0.30hs)
- Seminar "**Quantum Lambda Calculus**", *Department of Computer Science, UNR, Rosario, Argentina, Jun 2007* (Length: 1.30hs)
- Seminar "**A really brief introduction to Quantum Computation**", *Second Informatics Open Summit (JAI v.2.0)*, SADIO, Rosario, Argentina, Dec 2006 with Julián Samborski-Forlese (Length: 1.0hs)
- Seminar "**N-qubits Teleportation Algorithm**", *Physics Department, UVa, Spain, Mar 2006* (Length: 1.0hs)
- Seminar "**Quantum Teleportation**", *3rd Computer Science Conference (JCC), DCC, UNR, Rosario, Argentina, Dec 2005* (Length: 45min)
- Short Lecture "**Introduction to Quantum Computation**" *Department of Computer Science, UNR, Rosario, Argentina, May/Jun 2005* (Length: 8.0hs)

Scholarships

- Scholarship to attend the “School and Workshop on Dynamics with a Special Session on Complexity”, granted by its organizers through an official competitive application. Montevideo, Uruguay, May 2008.
- Scholarship to attend the “School of Cryptography and Self-Correcting Codes”, granted by its organizers through an official competitive application. Mar del Plata, Argentina, November 2006.
- Scholarship to attend the “CIMPA School: Mathematics in Internet and New Generation Networks”, granted by its organizers through an official competitive application. La Pedrera, Uruguay, March 2007.

Academic visits

- Dr. Manuel Gadella, Theoretical Physics Department, Universidad de Valladolid, Spain (1-11 Mar 06)
- Dr. Pablo Arrighi, QCG-CAPP group, Laboratoire d’Informatique de Grenoble, France (3-15 Mar 08)
- Dr. Miklos Santha, Université Paris Sud, Lab. de Recherche en Informatique, France (16-29 Mar 08)

Relevant short-courses attended

- *Ninth J. J. Giambiagi Winter School, Part A: Physics and the computers of the future*, Physics Department, UBA, Buenos Aires, July 30th to August 3th, 2007. <http://www.qiqfgba.df.uba.ar/giambiagi/>
- *CIMPA School: Mathematics in Internet and New Generation Networks*, La Pedrera, Uruguay, Mar 2007. <http://mirnugen.fing.edu.uy/en>
- *School of Cryptography and Self-Correcting Codes*, UNMdeP, Mar del Plata, Argentina, Nov 2006. <http://www.famaf.unc.edu.ar/~cripto06/>
- *1st Workshop and School in Quantum Computation and Information (WECIQ)*, UCPel, Pelotas, Brazil, Oct 2006. <http://ppginf.ucpel.tche.br/weciq/>
- *Trimester: “Quantum Information, Computation and Complexity”*, Institut Henri Poincaré, Paris, France, Feb 2006. <http://www.quantware.ups-tlse.fr/IHP2006>

Short-courses with exam mark attended

- *VIII International School of Informatics (CACIC’04)*, UNLM, La Matanza, Argentina, Oct 2004. Course: *Quantum Computation and its Applications to Cryptography* by Pedro Hecht PhD. (UBA, Argentina). Length: 15.0hs. Exam Mark: 10/10
- *School of Postgraduate and Continuous Education, FCEIA, UNR, Rosario, Argentina, Jun/Aug 2004*. Course: *Quantum Computation and Information* by Manuel Gadella PhD. (UVA, Spain). Length: 30.0hs. Exam Mark: 10/10
- *XI Summer School of Informatics (Río’04)*, UNRC, Río IV, Argentina, Feb 2004. Courses: *From Philosophy to Program Size* by Gregory Chaitin PhD. (IBM Watson Research Center, USA). Length: 12.5hs. Exam Mark: 9/10
Information Security by Emiliano Kargieman M.S. (Core Security, USA/Argentina). Length: 12.5hs. Exam Mark: 7/10.

Scientific Meetings attended

QIPC Review, Paris, France, 2006 — 1st \wedge 2nd JAI, Rosario, Argentina, 2005-2006 — 34th JAIIO, Rosario, Argentina, 2005 — QuantumSymposium 2005 Córdoba, Argentina, 2005 — WICC 2005, Río IV, Argentina, 2005 — X CACIC, La Matanza, Argentina, 2004 — 1st to 5th JCC, Rosario, Argentina, 2002 to 2007

References

- Manuel Gadella, PhD in Physics. Associate Professor at Theoretical Physics Department, Universidad de Valladolid, Spain. E-mail: gadella@fta.uva.es
- Gabriela Argiroffo, PhD in Mathematics. Associate Professor at Mathematics Department, Universidad Nacional de Rosario. E-mail: garua@fceia.unr.edu.ar
- Pablo E. Martínez López, PhD in Computer Science. Head, Department of Computer Science, Universidad Nacional de Quilmes. E-mail: fidel@sol.info.unlp.edu.ar
- Pablo Arrighi, PhD in Computer Science. Lecturer at the IMAG Department, Université Joseph Fourier and Research Fellow at the Laboratoire d’Informatique de Grenoble. E-mail: pablo.arrighi@imag.fr
- Jonathan Grattage, PhD in Computer Science. Research Fellow at the Laboratoire d’Informatique de Grenoble. E-mail: jonathan.grattage@imag.fr