

Eric Javier Biagioli

Mathematician, Computer Scientist, Software Engineer

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BRIEF SUMMARY

• Applied mathematician and computer scientist; formed at top-ranked institutions. • Fluent domain of Spanish, Portuguese, Italian, French and English. • Proven problem-solving skills, with medals at national and international mathematical and computer science competitions. • Vast experience in software development, both in academia and industry.

PERSONAL INFORMATION

Full name Eric Javier Biagioli.
Birth Dec 24, 1983 (34 years old). Argentina.
Nationality Argentinian, Italian.
Family status Single.

EDUCATION & LAST POSITIONS

- Aug 2018* **Software Engineer at PCR (Pôle de Cancérologie et Radiodiagnostic)**
- Apr 2017* Engineer position at the PCR, in Metz, France.
Main functions: maintain portions of existent modules and develop new modules of a system oriented to help to *all the people working at a hospital*.
- Mar 2017* **Scientific Engineer position at INRIA**
- Nov 2016* Postdoctoral engineer position at the team VEGAS (VEGAS is a team focused on computational geometry). Nancy, France.
Main project: implementation of a software that produces plots *topologically certified*.
- Oct 2016* **Postdoctoral position at IMPA**
- Mar 2016* Postdoctoral position at Instituto Nacional de Matemática Pura e Aplicada (IMPA), Rio de Janeiro, Brazil.
Main projects: research in the areas of graphic computing, symbolic computing, computational geometry and combinatorics.
- 2012 - 2016* **D.Sc. in Mathematics**
Instituto Nacional de Matemática Pura e Aplicada (IMPA) Rio de Janeiro, Brazil, 2016.
Thesis title: Methods for bounding and isolating the real roots of univariate polynomials.
Advisors: Luis Peñaranda and Roberto Imbuzeiro.
Expertises more relevant gained: Strong experience in computational geometry, computer vision, General Purpose GPU programming (mainly in CUDA), combinatorics, algorithms, high-performance implementations and symbolic computing.
- 2002 - 2008* **B.Sc. in Computer Science**
Qualification: Licenciado en Ciencias de la Computación (B.Sc. Degree in Computer Science). *The duration of the career is five years, and it includes the development of a graduation thesis of level equivalent to a Master II thesis in France.*
University: Universidad Nacional de Rosario (National University of Rosario).
Academic average: 93.3 over 100. *It was, at the moment of receiving the diploma, one of the five highest academic averages that the school had already had.*
Graduation thesis: Formal Verification of Real Inequalities using Semidefinite Programming. Developed at l'École Polytechnique, Palaiseau, France.
- 2009 - 2010* **Other**
In October 1st, 2009, started a PhD in Computer Science at l'Ecole Polytechnique, Palaiseau, France, as member of the teams *Typical* and *MaxPlus* of the *LIX* and *CMAP* laboratories. The course of the PhD was interrupted in 2010, for personal reasons.

Industry

- Aug - Dec, 2011: **Intel Corp.** Member of the team ASPI (Argentinian Software Pathfinding and Innovation) at Intel ASDC (Argentina Software Development Center). Main tasks: creation of innovative ideas, business models analysis, strategies analysis, implementation of fully functional prototypes.
- Sep 2010 - Jan 2011: **GGL Company.** GGL is a startup of the Stanford University, with offices in Los Angeles. Main tasks: (1) be part of the engineering team of the company. The main product of the company is a high-traffic website (www.sitejabber.com) that intends to help people to avoid fraudulent websites. And (2) develop a project founded by the National Science Foundation that intended to automate the detection of potentially fraudulent websites.
- Apr - Jul, 2008: **ForkWorks.** ForkWorks is a company dedicated to the development of Embedded Systems, situated in Villa Constitución, Santa Fe, Argentina. Computers for harvesters, planters and sprayers were developed at the company, using ARM processors. ForkWorks decided to incorporate a web interface allowing the users to check online (and in real time) many things related to their production. I was the project leader and main architect of this project. The project was finished successfully, and on time. The project was developed using PHP, and it had some parts written in C.
- Nov 2007 - Mar 2008: **GForgeGroup LLC.** GForge Company is situated in IOWA state, USA. The work was done through internet, and was mainly related to the development of new features and improvement of the GForge Server. The GForge Server is a tool that assists to manage projects in a collaborative way, like SourceForge does. The owner and main architect of GForge Group, Tim Perdue (who was my boss at GForge), was also one of the main architects of sourceforge.net. The work at GForge Group consisted mostly in developments using PHP. Gforge is a system written in PHP, so most of the time we were working in PHP. Developing new features for the system, fixing problems, etc.
- Dec 2005 - Mar 2007: **Nucleus S.A.** Nucleus S.A. is a software company situated in Rosario, Santa Fe. In this work, many tasks were developed: (a) the web interface of the system that the company develops. This interface uses AJAX's concepts (the major part of this job was to program in JavaScript); (b) design of the objects model that the team would implement through the development of the project; and (c) develop of many classes in C#, that were in the kernel of the system.

Academia

- Second term (2015): Professor Assistant at the course *Algoritmos*, lectured at IMPA by Professor Luiz Henrique de Figueiredo.
- First term (2011): Professor in *Algorithms and Data Structures I*, in the career *Computer Science*, at National University of Rosario.
- Second term (2010). Coach of the team which represented the National University of Rosario in the ACM-ICPC (Association for Computing Machinery- International Collegiate Programming Contest) regionals, south America.
- From 2002 to 2007: coach of the computing team which represented the Santa Fe province in the national finals.
- Coach of two members of the teams which represented Argentina at the IOI's (International Olympiad in Informatics) in the years 2005 (held in Poland), 2006 (held in Mexico), 2007 (held in Croatia).
- First term (2007), Second term (2007) and First term (2008): Professor Assistant in ALPI *Analysis of Programming Languages I*, in Computer Science at UNR (National University of Rosario), Argentina.
- First term 2004: Professor Assistant in *Logic and Algorithms*, in Computer Science at UNR (National University of Rosario), Argentina.
- From February, 2004 to 2007: head of the Argentinian Computing Olympiad in the Santa Fe province.

	Reading	Writing	Listening	Speaking
Spanish	(native)	(native)	(native)	(native)
Portuguese	Very good	Very good	Very good	Very good
English	Very good	Very good	Very good	Very good
Italian	Very good	Very Good	Very Good	Very Good
French	Very good	Intermediate	Good	Good

AWARDS, PRIZES

Argentinian Computing Olympiad

- 2001: 4° place at the national contest.
- 2001: Substitute member of the argentinian team for the IOI (International Olympiad in Informatics), which took place in Tampere, Finland.
- 2001: Silver Medal at the third CIIC (Spanish-American Informatics Contest)

Argentinian Mathematical Olympiad

- Four times medallist at the provincial Olympiads of Mathematics: ◦ 2001: **gold** medal. ◦ 2000: **silver** medal. ◦ 1999: **gold** medal. ◦ 1998: **silver** medal.
- Substitute member of the Argentinian team for the 40° IMO (International Mathematical Olympiad), which took place in Bucharest, Romania.
- 1998 and 1999: First Prize at the geometry national contest called *Cabri Clubs*, as a member of the team $\pi\pi QQ$, from the *Polytechnic Institute General San Martín* (Instituto Politécnico General San Martín), Rosario, Santa Fe, Argentina.
- Four times finalist of the Computing and Mathematics tournament held by Fundación Olimpiada Matemática Argentina. (Argentinian Mathematical Olympiad Foundation) (in 1998, 1999, 2000 and 2001).

Others

- Twice awarded the *Cámara Júnior al mérito* (Merit by Junior Chamber) prize, granted by Cámara Junior (Junior Chamber) from Casilda, in 1995 and 1998.
- Prize holder of *Emprendedores para el 2000* (Entrepreneur for 2000) in the category *Education*, granted by Junior Achievements Argentina in 1999.
- Acknowledgement (in 1999 and 2000) granted by National University of Rosario (UNR) Principalship because of the results achieved at the Argentinian Mathematical Olympiad.

PUBLICATIONS

- E. Biagioli, L. Peñaranda, R. Imbuzeiro Oliveira. **New method for bounding the roots of a univariate polynomial.** In *28th Conference of Patterns, Graphics and Images, Workshop of Works in Progress*, Salvador, Brazil, August 2015.
- E. Biagioli, F. Bergero, L. Peñaranda, R. Imbuzeiro Oliveira. **Applying root-finding techniques to extend Quantized-State-Systems-based Solvers.** In *XLII Conferencia Latinoamericana de Informática*, Valparaíso, Chile, October 2016.

In preparation:

- E. Biagioli, L. Peñaranda, R. Imbuzeiro Oliveira. **One technique to improve bounds on the positive roots of univariate polynomials.**
- E. Biagioli, L. Peñaranda, R. Imbuzeiro Oliveira. **A survey on the existent approaches for isolating the roots of a univariate polynomial.**
- E. Biagioli, L. Peñaranda, R. Imbuzeiro Oliveira. **An elementary algorithm for isolating the roots of fewnomials.**

REFERENCES

- **Dr. Luis Peñaranda.** Former professor at Computer Science Department, Federal University of Rio de Janeiro (UFRJ). luisp@ufrj.br, luis.penaranda@gmx.com.
- **Dr. Ana Casali.** Head of the Computer Science Department at the National University of Rosario. acasali@fceia.unr.edu.ar.
- **Prof. Guido Macchi.** Professor at Department of Computer Science at National University of Rosario. guido@fceia.unr.edu.ar.

CONFERENCES

- Aug, 26th - 29th, 2015, Salvador, Brazil: *SIBGRAPI 2015. XXVIII Conference on Graphics, Patterns and Images*. **Presented work:** *New method for bounding the roots of a univariate polynomial*, with L. Peñaranda and R. I. Oliveira.
- Oct 27th and 28th, 2011, Rosario, Argentina: *IX Conference on Computer Science*. **Plenary speaker.** Title of the talk: *Algorithms and Data Structures. Bringing topcoder problems to the classroom*.
- Nov, 23rd to 27th 2009, Mathematisches Forschungsinstitut Oberwolfach, Oberwolfach, Germany: *New trends in algorithms for real algebraic geometry*
- Sep 26th, 2009, Santa Fe, Argentina: *Statual Conference on Competitive Programming*. **Plenary speaker and opening talk.**
- Aug, 29th - Sep 2nd, 2005, Rosario: 34° JAIIO (Jornada Argentina de Informática e Investigación Operativa)
- Jul, 14th - 25th, 2003, Buenos Aires, Argentina: CIMPA School, *System of polynomial equations: from algebraic geometry to industrial applications*.
- Oct, 13th - 17th, 2003, Río Cuarto, Argentina: *Conference of the Argentinian Mathematical Union*. Courses read: *Geometry and Analysis in the Hyperbolic Plane* and *Quaternions, Rotations and Spheres*.