CURRICULUM VITAE

Name: Ariel Martín Pacetti

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Address: Departamento de Matemática, Pabellón I -Ciudad Universitaria.

1 Education:

- Licenciado en Matemática, 1999, Universidad de Buenos Aires, Argentina. (Director: Dr. Fernando Cukierman)

- Ph.D. at the University of Texas at Austin, 2003. (Advisor Dr. Fernando Rodriguez-Villegas).

2 Scholarships and Awards:

- Department of Mathematics Fellowship at University of Texas at Austin (06/1999-01/2000).

- Department of Mathematics Fellowship at University of Texas at Austin (05/2000-08/2000).

- Professor and Mrs. Hubert S. Wall Endowed Presidential Fellowship in Mathematics at University of Texas at Austin (09/2000-05/2001).

- Frank Gerth III Dissertation Awards, June 2003.

- Beca Posdoctoral Interna del CONICET (04/2004-04/2006).

- Beca Posdoctoral Externa Jóvenes Investigadores del CONICET (08/2009-07/2010).

3 Research Visits

- From September 2009 to July 2010: a year at the Centre de Recerca Matemática, Barcelona, Spain (participating in the research programme Arithmetic Geometry).

4   Talks in Conferences:

- Title: Construcción de un retículo de dimensión cuatro que no es proyectivo al mirarlo como módulo sobre su anillo de endomorfismos. LIII Reunión Anual de Comunicaciones Científicas, Unión Matemática Argentina. Held at the Universidad Nacional de Río Cuarto, Córdoba from October 15th to October 17th, 2003.

- Title: Álgebras de cuaterniones y sus aplicaciones a la teoría de números. XII Encuentro Rioplatense de Algebra y Geometría Algebraica, held at the Universidad de Buenos Aires between May 17 and May 21, 2004.

- Title: Una fórmula para el valor central de ciertas L-funciones de Hecke. XVIII Seminari de Teoria de Nombres de Barcelona, held at the Universidad de Barcelona from January 19th to January 23rd, 2004.

- Title: Shimura correspondence for weight 3/2 modular forms and quaternion algebras. Primeras Jornadas de Teoría de Números held at Vilanova i la Geltrú, Barcelona between June 30 and July 2, 2005.

- Title: Formas modulares de peso 1 y representaciones Galoisianas. XVI Coloquio Latinoamericano de álgebra held at Colonia del Uruguay between the 1st and the 9th of August, 2005.

- Title: Formas modulares de peso 3/2 y su relación con las curvas elípticas, Coloquio FAMAF, Universidad Nacional de Córdoba, 1 de Noviembre de 2005.

- Title: The congruent number problem, an introduction to Number Theory, Coloquio da Universidade de Coimbra, November 29, 2005.

- Title: Aritmética en Álgebras de Cuaterniones, III Encuentro Nacional de Algebra between the 31st of July and the 5th of August 2006.

- Title: Curvas Elípticas y Criptografía, course given at the FAMAF, Universidad Nacional de Córdoba between the 11th and the 18th of August 2006.

- Title: Puntos Racionales en Curvas, Universidad de la República (Uruguay), September 30 2006.

- Title: Números congruentes, curvas elípticas y formas modulares, XVI Encuentro Rioplatense de Álgebra y Geometría Algebraica, between the 12th and the 15th of December, 2006.

- Presentation Workshop: L-functions, ranks of elliptic curves and random matrix theory, Banff, Canada, between the 9th and the 13th of July, 2007.

- Title: Correspondencia de Shimura en nivel p^2, Segundas Jornadas de Teoría de Números, Madrid, Spain, between the 16th and the 19th of July, 2007.

- Title: Shimura correspondence and central values of L-series, International conference on the Algebraic and Arithmetic Theory of Quadratic Forms, held at Frutillar, Chile between the 13th and the 19th of December, 2007.

- Title: El sistema criptográfico NERDS, Jornadas de Criptografía y Códigos held at Colonia del Uruguay between the 11th and the 14th of August, 2008.

- Title: Construction of half integral weight modular forms and applications, "Arithmetic Geometry Seminar" at CRM, October 15, 2009.

- Title: "Representaciones de Galois y Modularidad", Coloquio Universidad Autnoma de Madrid, April 30 2010.

- Title: Modularity of the Consani-Scholten quintic, Arithmetic of Modular Forms and Modularity Results held at the Centre de Recerca Matematica (Barcelona) between the 5th and the 9th of July 2010.

- Ttle: Hecke and Sturm bounds for Hilbert modular surfaces,Computations with Modular Forms 2011 hedt at Heidelberg between the 5th and the 8th of September 2011.

- Title: Congruencias entre representaciones de Galois, CLAM 2012, held at Crdoba between the 6th and the 10th of August 2012.

- Title: Proving Modularity of Galois Representations, Number Theory Seminar, University of Warwick, March 14th 2013.

- Title: Half integral weight modular forms, Explicit Methods for Modular Forms, Warwick University, between the 18th and the 22th of March 2013.

5 Courses given in Conferences:

- Introducción a la Criptografía. LIV Reunión Anual de Comunicaciones Científicas, Unión Matemática Argentina, held at Neuquén between the 11th and the 15th of October, 2004.

- Introducción a la Teoría de Números. Jornadas de Criptografía y Códigos Correctores, held at Mar del Plata between the 20th and the 24th of November, 2006.

- Elliptic Curves. ElENA IV (encuentro nacional de álgebra), held at La Falda between the 4th and the 9th of August, 2008.

6 Other Conferences Attended:

- XLVIII Reunión Anual de Comunicaciones Científicas, Unión Matemática Argentina, held at the Universidad del Comahue, Bariloche, September,1998.

- Arizona Winter School 2000. Held at the University of Arizona, Tucson (USA), March, 2000.

- Arizona Winter School 2001. Held at the University of Arizona, Tucson (USA), March, 2001.

- Explicit Methods in Number Theory. Held at the Institut Henri Poincaré, Paris (France) from the 28th of November to the 10th of December, 2005.

- Advance Couse on Shimura Varieties and L-functions, Centre de Recerca Matemtica, from the 19th to the 24th of Octobre 2009.

- Autumn School "Towards a p-adic Langlands correspondence", held at the Mathematical Research Institute of the University of Sevilla from the 26th to the 30 of October 2010.

- Workshop "gomtrie arithmtique" in honor of Jean-Marc Fontaine, Institute Henri Poincar, from the 22nd to the 26th of March 2010.

7 Conferences Organized:

- "Jornadas de Criptografa y Cdigos Autocorrectores", Universidad Nacional de Mar del Plata, 20-24 de Noviembre de 2006.

- Workshop: *Arithmetic of Modular forms and Elliptic Curves*, IMPA, Rio de Janeiro, entre el 03/01/2011 y el 14/01/2011.

8 Work Experience:

- Ayudante de Segunda, Universidad de Buenos Aires, 1998-1999.

- Ayudante de Primera con dedicación semi-exclusiva, Universidad de Buenos Aires, 02/1999-06/1999.

- Ayudante con dedicación simple, Universidad de San Andrés, 02/1999-06/1999.

- Ayudante con dedicación simple, Universidad Nacional de General Sarmiento, 1998-06/1999.

- Research group in cryptography at Core-SDI, 1998-1999.

- Graduate Research Assistantship, University of Texas at Austin, 09/1999- 09/2002.

- Teaching Assistantship, University of Texas at Austin, 09/2002-07/2003.

- Jefe de Trabajos Prácticos con dedicación exclusiva interino de 09/2003- 03/2005.

- Jefe de Trabajos Prácticos con dedicación exclusiva regular desde 03/2005 (con licencia).

- Temporary full time Adjoint Professor, from March 2006 to September 2012.

- Investigador Asistente del CONICET since May 2007.

- Investigador Adjunto del CONICET since March 2010.

- Regular full time Adjoint Professor, since September 2012.

9 Publications:

- Futoransky, Ariel; Kargieman, Emiliano and Pacetti, Ariel; An attack on CRC- 32 integrity checks on encrypted channels using CBC and CFB modes. Proceedings DISC'98, Universidad Nacional Autonoma de Mexico (UNAM) 1998

- Pacetti, Ariel; Rodriguez-Villegas Fernando, Computing weight 2 modular forms of level p^2. Math. Comp. 74 (2005).

- Pacetti, Ariel, A formula for the central value of certain Hecke L-functions. Journal of Number Theory 113 (2005).

- Avendaño, Martín; Krick, Teresa; Pacetti, Ariel. Newton-Hensel interpolation lifting. Foundations of Computational Mathematics Vol. 6 Number 1, pp. 82-120 (2006).

- Pacetti, Ariel; Tornaría Gonzalo, Examples of Shimura correspondence for level p^2 and real quadratic twists. Ranks of elliptic curves and random matrix theory, 289–314. London Math. Soc. Lecture Note Ser., 341, Cambridge Univ. Press, Cambridge, 2007.

- Pacetti, Ariel; Tornaría, Gonzalo, Shimura Correspondence for level p^2 and the central values of L-series. Journal of Number Theory 124, Number 2 , pp. 396-414 (2007).

- Pacetti, Ariel, On the embedding problem for 2^+S_4 representations. Math. Comp. 76, pp. 2063-2075 (2007).

- Pacetti, Ariel; Tornaría Gonzalo, Computing central values of twisted L-series, the case of composite levels. Experimental Mathematics 17, Number 4 (2008), pp. 459-471.

- Pacetti, Ariel, "Shimura Correspondence and central values of twisted L-series". Proceeding of the "Segundas Jornadas de Teoría de Números", Bibl. Rev. Mat. Iberoamericana (2008) 221–242.

- Dieulefait, Luis; Guerberoff, Lucio and Pacetti, Ariel, "Proving Modularity for a given elliptic curve over an imaginary quadratic field". Math. Comp. 79 (2010), no. 270, 1145–1170.

- Dieulefait, Luis; Guerberoff, Lucio and Pacetti, Ariel, "Proving Modularity for a given elliptic curve over an imaginary quadratic field". Math. Comp. 79 (2010), no. 270, 1145–1170.

- Pacetti, Ariel and Tornara Gonzalo, "Shimura Correspondence for level p^2 and the central values of L-series II" to appear in IJNT.

- Dieulefait, Luis; Pacetti, Ariel and Schuett Mathias, "Modularity of the Consani-Scholten quintic", Documenta Mathematica 17 (2012), pp. 953-988.

- Pacetti, Ariel and Sirolli, Nicolas, "Computing ideal class representatives in quaternion algebras", Math. Comp. Published electronically: January 9, 2014

- Pacetti, Ariel, "On the change of root numbers under twisting and applications", Proceedings of the American Mathematical Society 141, N. 8 (2013), pp. 2615-2628.

- Burgos-Gil, José Ignavio and Pacetti, Ariel, "Hecke and Sturm bounds for Hilbert modular forms over real quadratic fields", submitted (arXiv:1310.6991)

- Camporino, Maximiliano and Pacetti, Ariel, "Congruences between modular forms modulo prime powers", submitted (arXiv:1312.4925)

- Dieulefait, Luis and Pacetti, Ariel, "Connectedness of Hecke Algebras and the Rayuela conjecture: a path to functoriality and modularity", submitted (arXiv:1402.6270)

- Kohen, Daniel and Pacetti, Ariel, "Heegner points on Cartan non-split curves", submitted (arXiv:1403.7801)

- Berger, Tobias; Dembele, Lassina; Pacetti, Ariel and Sengun, Mehmet Haluk, "Theta Lifts of Bianchi Modular Forms and Applications to Paramodularity", to appear in the Journal of the London Mathematical Society (arXiv:1404.5142).

10 Research Projects:

- Member of the group "Computational Number Theory", funded by a TARP grant from the City of Austin (09/1999-06/2001). More information can be found on the webpage: http://www.ma.utexas.edu/users/villegas/cnt/cnt-frames.html.

- Subsidio: Geometría y Topología Algebraica, Código: $X189$. Director: Cukierman, Fernando, Codirector: Ronco, Mara Ofelia, Codirector: Graña, Matías.

- Member of PAV 2003 Aplicaciones e integracón interdisciplinaria de la matemática (número 120), subproyecto Geometría Algebraica, Teoría de Números y aplicaciones, funded by the Agencia Nacional de Promoción Científica y Tecnológica.

- Programación Científica UBACYT 2006/2009, Título del Proyecto: Correspondencia de Shimura para formas modulares de peso 2. Código: X867. Director: Pacetti, Ariel.

- PICT2006 Tipo B (Investigadores Jóvenes) Código 312. Título del Proyecto: "Correspondencia de Shimura". Director: Pacetti, Ariel.

- Programación Científica UBACYT 2008/2011, Título del Proyecto: Temas de Algebra Computacional. Código: X113. Directora: Teresa Krick

- PIP 2010-2012, Título del Proyecto: Algebra Computacional, Aritmética y Complejidad. Código: 11220090100801. Directora: Teresa Krick.

- PICT-2010-0681 , Título del Proyecto: Computational Algebra, Arithmetics and Complexity. Directora: Teresa Krick.

11 Students:

Undergraduate:

- Guerberoff, Lucio. Tesina de Licenciatura: "Teoría de Cuerpos de Clases", February 2007.

- Valdettaro, Marcelo. Tesina de Licenciatura: "Elliptic curves over $\mathbb{Q}(t)$ with high rank", November 2008.

- Camporino, Maximiliano. Tesina de Licenciatura: "Conjeturas de Serre" (en preparación).

- Kohen, Daniel. Tesina de Licenciatura: "Puntos de Heegner", Marzo 2013 (UBA).

- Vescovo, Nicolás. Tesina de Licenciatura: "Sumas de cuatro cuadrados y Formas modulares", Marzo 2013 (UNLP).

Graduate:

- Quattrini, Patricia; Ph.D. co-advisor. Title: "El efecto de la torsión en la distribución de Sha de los twists cuadráticos de una curva elíptica", July 2008.

- Guerberoff, Lucio; co-advisor Ph.D. student since 2007 with a CONICET grant.

- Sirolli, Nicols, Ph.D. thesis: "Clculo de formas de Hilbert de pesos entero y medio entero", July 9th, 2013.

- Camporino, Maximiliano; Ph.D. student with a CONICET grant since April 2011.

- Kohen, Daniel; Ph.D. student with a CONICET grant since April 2013.

- Nicolás, Vescovo; Ph.D. student with a CONICET grant since April 2013.