

CURRICULUM VITAE

Francesc Fité Naya

Ramón y Cajal research fellow

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Academic degrees and qualifications

- **PhD in Mathematics.**

Date: April 2011.

Institution: Universitat Politècnica de Catalunya.

Advisor: J.-C. Lario.

- **Degree in Mathematics.**

Date: June 2006.

Institution: Universitat Politècnica de Catalunya.

- **Acreditació Lector**

Date: June 2015.

Institution: Agència per a la Qualitat del Sistema Universitari de Catalunya (AQU)

- **Acreditació Agregat**

Date: June 2017.

Institution: AQU

- **Acreditación I3**

Date: January 2023.

Institution: Agencia estatal de investigación

Positions held

- **Ramón y Cajal research fellow** at Universitat de Barcelona.
Dates: September 2021 - Present.
- **Research Scientist** at Massachusetts Institute of Technology.
Dates: August 2019 - August 2021
Mentors: B. Poonen and A.V. Sutherland.
- **Member** at Institute for Advanced Study.
Dates: September 2018 - July 2019.
- **Postdoctoral fellow** at Universitat Politècnica de Catalunya/BGSMath.
Dates: September 2016 - August 2018.
Mentor: V. Rotger.
- **Postdoctoral fellow** at Universität Duisburg-Essen.
Dates: October 2014 - August 2016.
Mentor: U. Görtz.
- **Postdoctoral fellow** at Universität Bielefeld.
Dates: April 2012 - September 2014.
Mentor: M. Spieß.
- **Visting scholar** at the University of California in San Diego.
Dates: February 2012 - March 2012.
Mentor: K.S. Kedlaya.
- **Visiting scholar** at Massachusetts Institute of Technology.
Dates: September 2011 - January 2012.
Mentors: K.S. Kedlaya and A.V. Sutherland.

- **Visiting scholar** at University of Cambridge.
Dates: May 2011 - July 2011.
Mentor: T. Dokchitser.
- **Graduate student** at Universitat Politècnica de Catalunya.
Dates: January 2007 - April 2011.
Supervisor: J-C. Lario.

Grants received

- **Proyectos de generación de conocimiento; PID2022-137605NB-I00** (Co-PI with X. Guitart).
Dates: September 2023 - September 2026.
Granting institution: Spanish Government.
- **Santiago Ramón y Cajal research fellowship**
Dates: September 2021 - September 2026.
Granting institution: Spanish Government.
- **María de Maeztu postdoctoral fellowship**
Dates: September 2016 - September 2018.
Granting institution: Barcelona Graduate School of Mathematics.
- **Fundació Ferran Sunyer i Balaguer travel Grant**
Dates: May 2011 - July 2011.
Granting institution: Institut d'Estudis Catalans.
- **FPU PhD Grant**
Dates: September 2007 - December 2011.
Granting institution: Spanish Government.
- **FI PhD Grant**
Dates: January 2007 - September 2007.
Granting institution: Catalan Government.

Teaching activity performed

- **Algebra** (=Linear Algebra).
Dates: SS2009.
Institution: Universitat Politècnica de Catalunya.
- **Abstract Algebra** (=Galois Theory).
Dates: SS2010 and SS2011.
Institution: Universitat Politècnica de Catalunya.
- **Algebraic Geometry** (=Mumford's Red Book).
Dates: SS2014.
Institution: Universität Bielefeld.
- **Algebraic Number Theory I** (=Samuel's book; exercises).
Dates: WS2015.
Institution: Universität Duisburg-Essen.
- **Algebraic Number Theory II** (=Local Class Field Theory; exercises).
Dates: SS2016.
Institution: Universität Duisburg-Essen.
- **Fonaments Matemàtics**.
Dates: WS2016 and WS2017.
Institution: Universitat Politècnica de Catalunya.
- **Complex Analysis** (exercises).
Dates: SS2017 and SS2018.
Institution: Universitat Politècnica de Catalunya.
- **Introduction to Arithmetic**.
At the UPC Math Summer Camp 2018.
- **Equacions algebraiques** (=Galois Theory).
Dates: WS2021.
Institution: Universitat de Barcelona.

- **Elliptic curves.**
Dates: SS2022.
Institution: Universitat de Barcelona.
- **Algebraic number theory.**
Dates: WS2022.
Institution: Universitat de Barcelona.
- **Analytic number theory.**
Dates: WS2023.
Institution: Universitat de Barcelona.

Students mentoring

- **PhD thesis under supervision.**
Enric Florit, Francesc Pedret.
- **Master thesis supervised.**
Pol Torrent (SS2018).
- **Bachelor theses supervised.**
Raúl Alonso (SS2018), Martí Roset (WS2018), Pol Martí (WS2023),
Àlex Duran (SS2023), Lluís Carmona (SS2023), Àlex Suárez (WS2023).

Other activities and service

- Co-organizer (with J-C. Lario) of ‘The Barcelona-Boston-Tokyo Number Theory Seminar in memory of Fumiyuki Momose’, Barcelona, May 2012.
- Co-organizer (with X. Guitart, J-C. Lario, M. Masdeu) of the Workshop ‘Effective methods for Darmon points’, Benàs, August 2013.
- Reviewer for Mathematical Reviews/MathSciNet, The Ramanujan Journal, Journal of the LMS, IJNT, Experimental Mathematics, Acta Arithmetica, ANTS, TAMS, Canad. J. Math, JTNB,

Math. Comp., Research in Number Theory, Journal of Algebra, Compositio Mathematica, Advances in Mathematics, and IMRN.

- Lecturer at the Winter School ‘Frobenius distributions on curves’ (3 hour course: *Sato-Tate groups of abelian surfaces*), Luminy, February 2014.
- Lecturer at the ‘Barcelona Introduction to Mathematical Research’ (5 hour course: *Linear representations of finite groups: the theorems of Burnside and Minkowski*), Barcelona, July 2023.
- Project assistant at the Arizona Winter School ‘Analytic methods in arithmetic geometry’, Tucson, March 2016.
- Co-organizer (with D. Barrera, X. Guitart, S. Molina, V. Rotger) of the Workshop ‘ p -adic methods for Galois representations and modular forms’, Barcelona, February 2017.
- Co-organizer (with D. Barrera, X. Guitart, S. Molina, V. Rotger) of the BGSMath ‘Number Theory Special Month’, Barcelona, February-March 2017.
- Co-organizer (with E. Lorenzo) of ‘Sesión de Teoría de números’ in ‘IV Congreso de jóvenes investigadores de la RSME’, València, September 2017.
- Co-organizer (with K.H. Kweon, B. Poonen, Z. Yang, Z. Zhang) of STAGE (arithmetic geometry learning seminar at MIT), Fall 2020.
- Co-organizer (with A.C. Cojocaru) of ‘Around Frobenius distributions and related topics II’, Online, June 2021.
- Co-organizer (with M. Masdeu) of ‘Number Theory in Montserrat’, Montserrat, June 2023.
- Co-organizer (with E. Ambrosi, G. Ancona, X. Guitart) of ‘Curves, Abelian Varieties, and Related Topics’, Universitat de Barcelona/CRM, June 2024.

- Scientifical co-organizer of STNB 2013, 2017, 2018.
- Coordinator (grader) at the ‘XLIX International Mathematical Olympiad’, Madrid, 2008. Teacher for the Spanish IMO team at the UPC summer camp, 2010-2022.
- Member of the selection committee at the ‘Spanish Mathematical Olympiad’, 2008-2009-2010-2013-2016-2017-2018. Member of the selection committee at the ‘Catalan Mathematical Olympiad’, 2017. Jury of the ‘Barcelona Tech Mathematics Competition for university students’, 2017-2018-2023.
- Dissemination talk for highschool students ‘Una breu història dels nombres primers: d’Euclides a Tate’, Universitat de Barcelona, 2022.
- Highest Mark among the graduating students in the year 2006 at the Faculty of Mathematics and Statistics (UPC).
- Second Highest Mark in Catalonia at the University Entrance Examination, June 2001.

Language competences

- Catalan, Spanish, English, German, French.

Research publications and preprints

- F. Fité, *Artin representations attached to pairs of isogenous abelian varieties*, Journal of Number Theory **133** n. 4 (2013), 1331–1345.
- F. Fité, J.-C. Lario, *The twisting representation of the L-function of a curve*, Revista Matemática Iberoamericana **29** n. 3 (2013), 749–764.
- F. Fité, K.S. Kedlaya, A.V. Sutherland, V. Rotger, *Sato-Tate distributions and Galois endomorphism modules in genus 2*, Compositio Mathematica **148**, n. 5 (2012), 1390–1442.

- F. Fité, A.V. Sutherland, *Sato-Tate distributions of twists of $y^2 = x^5 - x$ and $y^2 = x^6 + 1$* , Algebra & Number Theory **8** n. 3 (2014), 543–585.
- F. Fité, K.S. Kedlaya, A.V. Sutherland, *Sato-Tate groups of some weight 3 motives*, Contemporary Mathematics **663** (2016), 57–101.
- F. Fité, J. González, J.-C. Lario, *Frobenius distribution for quotients of Fermat curves of prime exponent*, Canad. J. Math. **68** n. 2 (2016), 361–394.
- F. Fité, *Equidistribution, L-functions, and Sato-Tate groups*, Contemporary Mathematics **649** (2015), 63–88.
- F. Fité, I.E. Shparlinski, *On the singularity of the Demjanenko matrix of quotients of Fermat curves*, Proc. Amer. Math. Soc. **144** (2016), no. 1, 55–63.
- F. Fité, A.V. Sutherland, *Sato-Tate groups of $y^2 = x^8 + c$ and $y^2 = x^7 - cx$* , Contemporary Mathematics **663** (2016), 103–126.
- F. Fité, X. Guitart, *Fields of definition of elliptic k -curves and the realizability of all genus 2 Sato–Tate groups over a number field*, Trans. Amer. Math. Soc. **370**, n. 7 (2018), 4623–4659.
- B. Banwait, F. Fité, D. Loughran, *Del Pezzo surfaces over finite fields and their Frobenius traces*, Math. Proc. Camb. Phil. Soc. (2019), **167**, 35–60.
- F. Fité, X. Guitart, *On the rank and the convergence rate towards the Sato–Tate measure*, International Mathematics Research Notices, Volume 2019, Issue **13**, July 2019, Pages 4081–4118.
- F. Fité, E. Lorenzo, A.V. Sutherland, *Sato-Tate distributions of twists of the Fermat and the Klein quartics*, Res. Math. Sci. **5**:41 (2018).
- A. Betina, S. Deo, F. Fité, *On the Hilbert eigenvariety at exotic and CM classical weight 1 points*, Mathematische Zeitschrift, **298**(3), 1077–1096.

- F. Fité, X. Guitart, *Endomorphism algebras of geometrically split abelian surfaces over \mathbb{Q}* , Algebra & Number Theory **14** n. 6 (2020), 1399–1421.
- F. Fité, X. Guitart, *Tate module tensor decompositions and the Sato–Tate conjecture for certain abelian varieties potentially of GL_2 -type*, Math. Z. **300** (2022), no. 3, 2975–2995.
- E. Costa, F. Fité, A.V. Sutherland, *Arithmetic invariants from Sato–Tate moments*, Comptes Rendus Mathématique **357** (2019), 823–826.
- F. Fité, K.S. Kedlaya, A.V. Sutherland *Sato–Tate groups of abelian threefolds: a preview of the classification*, Contemporary Mathematics **770** (2021), 103–129.
- A. Bucur, F. Fité, K.S. Kedlaya, *Effective Sato–Tate conjecture for abelian varieties and applications*, to appear in Journal of the European Mathematical Society.
- F. Fité, *Ordinary primes for some varieties with extra endomorphisms*, Publ. Mat. **68** (2024), 27–40.
- S. Asif, F. Fité, D. Pentland, *Computing L -Polynomials of Picard curves from Cartier–Manin matrices*, Math. Comp. **91** (2022), no. 334, 943–971.
- F. Fité, K.S. Kedlaya, A.V. Sutherland, *Sato–Tate groups of abelian threefolds*, to appear in Memoirs of the American Mathematical Society.
- F. Fité, *On a local-global principle for quadratic twists of abelian varieties*, Math. Ann. **388**, pages 769–794, (2024).
- F. Fité, A. Perucca, *A local-global principle for polyquadratic twists of abelian surfaces*, to appear in Indiana University Mathematics Journal.
- F. Fité, E. Florit, X. Guitart, *Endomorphism algebras of geometrically split genus 2 Jacobians over \mathbb{Q}* , submitted.

- A. Bucur, F. Fité, K.S. Kedlaya, *Frobenius sign separation for abelian varieties*, submitted.

Other contributions: Survey publications & Appendices

- F. Fité, *Sèries de Dirichlet associades a formes modulars de Siegel*, Notes del Seminari de Teoria de Nombres UB-UAB-UPC, Bayer-Nart-Quer, ISBN: 978-84-934244-7-3, Barcelona, 2009.
- C. Johansson, *On the Sato-Tate conjecture for non-generic abelian surfaces. With an appendix by Francesc Fité*. Trans. Amer. Math. Soc., **369** (2017), 6303–6325
- J.-C. Lario, A. Somoza, *The Sato-Tate conjecture for a Picard curve with complex multiplication. With an appendix by Francesc Fité*. Contemporary Mathematics **701** (2018), 151–165.

Last modified: January 25, 2024.