

# Dr. Teresa SCARINCI

## PERSONAL DATA

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NATIONALITY: Italian  
GENDER: Female  
PERSONAL ADDRESS: L'Aquila (AQ)- domicile, Ortona (CH) - residence  
EMAIL: [teresa.scarinci@gmail.com](mailto:teresa.scarinci@gmail.com), [teresa.scarinci@univaq.it](mailto:teresa.scarinci@univaq.it)  
PROFESSIONAL ADDRESS: University of l'Aquila, DISIM  
Via Vetoio, Loc. Coppito (l'Aquila)  
WEBSITE: <https://sites.google.com/site/mathscarinci/teresa-scarinci-phd>.

## CURRENT POSITION

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Since June 2020, Assistant Professor (RTD-A) of Mathematical Analysis at DISIM (Department of Information Engineering, Computer Science and Mathematics University of L'Aquila), University of l'Aquila

## MAIN RESEARCH INTERESTS

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Computational optimization, optimal control, PDE-constrained optimization, Hamilton-Jacobi-Bellman equations and subelliptic PDEs, first-order methods in infinite-dimensional optimization, nonsmooth and set-valued analysis, stochastic approximation methods

## FORMER ACADEMIC POSITIONS AND AWARDS

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<i>May 2020</i> JANUARY 2017	Post-Doc Researcher at the University of Vienna
<i>December 2015</i> SEPTEMBER 2015	Research Assistant at the Institute of Statistics and Mathematical Methods in Economics, Vienna University of Technology (Austria)
<i>December 2016</i> JANUARY 2016	Post-Doc Researcher at the Institute of Statistics and Mathematical Methods in Economics, Vienna University of Technology (Austria)
<i>December 2015</i> SEPTEMBER 2015	Research Assistant at the Institute of Statistics and Mathematical Methods in Economics, Vienna University of Technology (Austria)
<i>August 2015</i> FEBRUARY 2015	“demi-ATER - Teaching and Research Temporary Attaché” at the Institut de Mathématiques de Jussieu, Pierre et Marie Curie University, Paris

## EDUCATION

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- PH.D. CUM LAUDE IN MATHEMATICS defended on November 30, 2015, at the University of Roma Tor Vergata, Italy
  - *Dissertation*: “Sensitivity Analysis and Regularity of Solutions of a class of HJB equations arising in optimal control”
  - *Affiliations*: Department of Mathematics of University of Rome Tor Vergata

(Italy) and Institut de Mathématiques de Jussieu, Pierre et Marie Curie University of Paris (international joint doctoral programs, “cotutelle de thèse”)

– *Supervisors:* Prof. Piermarco Cannarsa and DR Hélène Frankowska

- M.SC. AND B.SC. CUM LAUDE IN MATHEMATICS received on July 2012 and March 2010, respectively, at Università dell’Aquila (Italy)

## TEACHING EXPERIENCE

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- Summer semester 2020-2021, Analisi Matematica 2 together with Prof. Di Francesco, Ingegneria Civile Ambientale-Edile Architettura, Università dell’Aquila.
- Winter semester 2020-2021 and 2021/2022, Analisi Matematica 1 together with Prof. Amadori, Ingegneria Civile Ambientale-Edile Architettura, Università dell’Aquila
- Winter semester 2021/2022, Analisi Matematica 1 together with Prof. Engel, Ingegneria dell’Informazione (2021/2022), Università dell’Aquila
- February 2020 and February 2022. PhD Course “Introduction to Optimal Control” for the Ph.D. in Mathematics and Modeling at DISIM, University of l’Aquila
- Summer 2018 and 2019, “Mathematics 2 - Optimization in Economics” (Uebung/*Exercise course*), for bachelor students, University of Vienna
- Winter 2017 and Winter 2018, “Mathematik 1” (Uebung/*Exercise course*), for bachelor students, University of Vienna
- Spring 2015, “Suites et intégrales, Algebre linéaire” (TDs/*Exercise course*), for bachelor students, Pierre at Marie Curie University, Paris
- Spring 2015, “Analyse vectorielle et intégrales multiples” (TDs/*Exercise course*) for *Parcours des Ecoles d’Ingénieurs de Polytech* at Pierre at Marie Curie University
- Spring 2013, “Fisica Matematica 2 - Physical mathematics 2” and “Analisi Matematica 4 - Mathematical analysis 4” (tutor), for bachelor students, University of Rome Tor Vergata

## PUBLICATIONS, PROCEEDINGS AND PREPRINTS 2017-2022

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1. C. Geiersbach, T. Scarinci. Stochastic proximal gradient methods for nonconvex problems in Hilbert spaces. *Computational Optimization and Applications*, 2021, 78(3), pp. 705–740
2. M. Quincampoix, T. Scarinci, V. Veliov. On the metric regularity of affine optimal control problems. *Journal of Convex Analysis* 27 (2020), No. 2, 509-533.
3. J. Preininger, T. Scarinci, V. Veliov. Metric regularity properties in bang-bang type linear-quadratic optimal control problems. *Set-Valued and Variational Analysis*, 2019, 27(2), pp. 381–404.
4. P. Albano, P. Cannarsa, T. Scarinci. *On the partial regularity of the solution of the subelliptic eikonal equation*. *Comptes Rendus Mathématique*, 2018, 356(2), pp. 172–176.
5. P. Albano, P. Cannarsa, T. Scarinci. *Regularity results for the minimum time function with Hörmander vector fields*. *Journal of Differential Equations*, 264, no. 5, pp. 3312–3335, 2018.
6. A. Pietrus, T. Scarinci, V. Veliov. *High Order Discrete Approximations to Mayer’s Problems for Linear Systems*. *SIAM Journal on Control and Optimization*, 2018,

56(1), pp. 102–119.

7. T. Scarinci, V. Veliov. *Higher-order numerical scheme for linear-quadratic optimal control problems with bang-bang solutions*. Computational Optimization and Applications 69(2), pp. 403-422, 2018.
8. J. Preininger, T. Scarinci, V. Veliov, *On the regularity of linear-quadratic optimal control problems with bang-bang solutions*. Large-scale scientific computing, 237–245, Lecture Notes in Comput. Sci., 10665, Springer, Cham, 2018. 49N60 (49K40)
9. Book chapter: Optimality conditions (in Pontryagin form). Authors: M.S. Aronna, D. Tonon, A. Boccia, C.M. Campos, M. Mazzola, L.V. Nguyen, M. Palladino, T. Scarinci, F. Silva. In: Optimal Control: Novel Directions and Applications, Lectures Notes in Mathematics Series (2017)

## RESEARCH VISITS

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- Visitor at University of Rome Tor Vergata (Italy), by Piermarco Cannarsa. One week, December 2017 (sponsored by the Department of Mathematics of Tor Vergata)
- September 2014, for four months, at Institute Henri Poincaré of Paris, during the trimester "Geometry, analysis and dynamical systems on sub-Riemannian manifolds"

## CONFERENCES, TALKS AND SEMINARS

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- Invited (Junior) talk at the INdAM Workshop "Analysis and Numerics of Design, Control and Inverse Problems", July 1 - July 7, 2021, Rome (Italy)
- Part of the scientific committee and co-organizer of a thematic session for the International conference Large-Scale Scientific Computations LSSC 2021, June 7 - 11, 2021, Sozopol, Bulgaria
- Organizer of a thematic session and talk at VIII PDEs, optimal design and numerics, August 18-30, 2019, Science Center of Benasque (Spain)
- Talk at ICCOPT 2019, August 3-8, 2019, Technical University of Berlin (Germany)
- Talk at EURO2019, 23-26 June 2019, UCD, Dublin (Ireland)
- Talk at the Conference Large-Scale Scientific Computations, LSSC'19, 10-14 June 2019, Sozopol (Bulgaria)
- Invited seminar during the INDAM intensive trimester Shape optimization, control and inverse problems for PDEs, University of Naples Federico II (Italy)
- Invited talk at the workshop Control Theory and Applications, 28-29 March 2019, Gran Sasso Science Institute, L'Aquila (Italy)
- Invited talk at the international workshop Analysis, Control and Inverse Problems for PDEs, 26-30 November 2018, Napoli (Italy)
- Invited talk at the 14th International Workshop on Well-Posedness of Optimization Problems and Related Topics, 20-24 August 2018, Borovets (Bulgaria)
- Invited talk at the 14th Viennese Conference on Optimal Control and Dynamic Games, 3-6 July 2018, Vienna (Austria)
- Invited talk at the 7th international conference on High Performance Scientific Computing, 19-23 March 2018, Hanoi (Vietnam)

- Invited talk at the workshop “Games, Dynamic and Optimization” GDO2018, University of Vienna, 13-15 March, 2018 (Austria)
- Seminar at the Department of Mathematics (Seminario di Equazioni Differenziali), 19 December 2017, University of Roma Tor Vergata (Italy)
- Seminar at the Department of Mathematics of the University of Florence (Italy), 13 October 2017
- Invited talk at the International Conference “New Trends in Control Theory and PDEs”, 3-7 July 2017, INdAM, University Roma la Sapienza (Italy)
- Contributed talk at the Conference “Mathematical Control Theory”, 27-30 June 2017, Porquerolles (France)
- Invited talk at the 11-th International Conference on Large-Scale Scientific Computations, 5-9 June 2017, Sozopol (Bulgaria)
- Contributed talk at the Workshop “Advances in Convex Analysis and Optimization”, 5-12 Luglio 2016, Centro “Ettore Majorana”, Erice (Italy)
- Invited speaker at the Workshop on Hamilton-Jacobi Equations, 24-30 July 2016, Fudan University, Shanghai (China)
- Seminar at Laboratoire de Mathématiques de Bretagne Atlantique, 5 May 2015, Brest (France)
- Contributed talk at the Workshop “New Perspectives in Optimal Control and Games”, 10-12 November 2014, Università di Roma “La Sapienza” (Italy)
- Contributed talk at the Conférence MODE 2014, 26-28 March 2014, Rennes (France)
- Contributed talk at the SADCO-WIAS Young Research Workshop, 29-31 January 2014, Berlin (Germany)
- Contributed talk at the 16th French-German-Polish Conference on Optimization, 23-27 September 2013, Krakow (Poland)
- Contributed talk in the Second Itn-Sadco Doctoral days, 10-13 June 2013 at Ensta ParisTech (France)

## SCIENTIFIC RESPONSIBILITIES AND PRIZES

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- September 2013-December 2014. Early-Stage Researcher fellow recruited by Inria (France) within the Initial Training Network “Sensitivity Analysis for Deterministic Controller Design” supported by the European Union under the 7th Framework Programme «FP7-PEOPLE-2010-ITN». Grant agreement number 264735-SADCO.
- Université Franco-Italienne. Bando Vinci. Grant for the PhD thesis, November 2013.

## ACADEMIC SERVICE

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- 2022: reviewer and member of the committee for the PhD Thesis of X. Liu, University of South Australia.
- 2021-2022: member of different thesis committees for the Bachelor degree in Mathematics, University of l’Aquila.

## LANGUAGES

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My mother language is Italian, and I can fluently speak English and French. I am a intermediate in German (B2 level course attended at Sprachenzentrum Universität Wien).

## OTHER

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- National Scientific qualification as associate in the Italian higher education system, in the call 2021/2023 (Ministerial Decree n. 553/2021 and 589/2021) for the disciplinary field of 01/A3 - Mathematical analysis, probability and statistics. Validity: 31/01/2022-31/01/2031
- Scopus: h-index 5, citations 69, documents 13. According to Scopus and WoS: citations 73, h-index for the last ten years 6. Scopus, author ID: 56681083600
- Since 2012, member of INdAM (Italian National Institute of High Mathematics) – Section GNAMPA - group for mathematical analysis, probability and its applications
- Participant (as researcher) of the following projects of GNAMPA funded by INdAM
  - “Problemi inversi e di controllo per equazioni di evoluzione e loro applicazioni”, coordinator Dr. Floridia (2020). Participants: Bucci, Fragnelli, Guglielmi, Loreti, Scarinci, Sforza, Urbani, Pignotti.
  - “Control of PDEs for physical models and life sciences” coordinated by G. Fragnelli - Univ. Bari (2019)
  - “Analysis and control of nonlinear differential models” coordinated by C. Pignotti - Univ. l’Aquila (2018)
  - “Asymptotic behavior and control of evolutionary nonlinear equations” coordinated by C. Pignotti - Univ. l’Aquila (2017)
  - “Analysis and control of non linear PDEs” coordinated by G. Floridia - Univ. Napoli (2015)
  - “Sottoinsiemi di uno spazio di Hilbert: esistenza, unicità, regolarità ed invarianza” coordinated by L. Tubaro - Univ. Trieste (2013)
- From 2016, Reviewer for Mathematical Reviews AMS - American Math. Society
- Serving as referee for several journals (ESAIM-COCV, IEEE Control Systems Letters, JOTA)

L’Aquila, 10.04.2022