

CURRICULUM VITÆ - GIULIA SARFATTI

Personal informations and contacts:

Date and place of birth 23/07/1984 Firenze (Italy).
Nationality: Italian.
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Current position:

October 2016 - September 2019 (expected): Researcher RTD a)
Università di Firenze, Dipartimento di Matematica e Informatica “Ulisse Dini”
Viale Morgagni 67/a, 50143 Firenze, Italy

Qualification:

French qualification for the position of Maître de conférences, Section 25 - Mathématiques, campaign 2015, qualification n. 15225275558.

Past positions:

1/9/2015 - 30/9/2016 Marie Curie INdAM Cofund research fellow. *Outgoing host institution:* Université Pierre et Marie Curie, Institut de Mathématiques de Jussieu - Paris Rive Gauche.
1/9/2013 - 31/08/2015 post doctoral researcher (assegnista di ricerca) at the Dipartimento di Matematica, Università di Bologna.
1/1/2010 - 31/12/2012 graduate student at Dipartimento di Matematica e Informatica “Ulisse Dini”, Università di Firenze.

Education:

- **Dottorato di Ricerca (Ph.D.) in Mathematics**, Università degli Studi di Firenze, defended the 6/5/2013
Thesis: *Elements of function theory in the unit ball of quaternions*.
Advisor: Graziano Gentili.
Jury: Filippo Bracci (President), Andrea Lucchini, Maria Groppi.
- **Laurea specialistica (Master) in Mathematics cum Laude**, Università degli Studi di Firenze, defended the 15/12/2009.
Thesis: *Teoremi di tipo Landau-Toeplitz per funzioni regolari di variabile quaternionica*.
Advisor: Graziano Gentili.
- **Laurea (Bachelor) in Mathematics**, Università degli Studi di Firenze, defended the 15/10/2007.
Thesis: *Excursus sulla dimostrazione della congettura di Poincaré*.
Advisor: Fabio Vlacci.

Grants:

- 1/10/2016 - 30/9/2019: contract as Ricercatore a tempo determinato di tipo a) at Università di Firenze, Dipartimento di Matematica e Informatica “Ulisse Dini”;
- 1/9/2015 - 1/9/2015: Marie Curie INdAM Cofund fellowship given by Istituto Nazionale di Alta Matematica, *outgoing host institution:* Institut de Mathématiques de Jussieu, Paris, France;
- 24/2 - 24/5 2014: Marco Polo fellowship given by Università degli Studi di Bologna, for research activity abroad;
- 1/9/2013 - 31/8/2015: Post-Doc fellowship (“Assegno di Ricerca”) given by Dipartimento di Matematica, Università degli Studi di Bologna;

- 1/9/2010 - 31/5/2011: fellowship of the Unione Matematica Italiana for spending two semesters at M.I.T. as a visiting student;
- 1/1/2010 - 31/12/2012: Ph.D. fellowship, given by Università degli Studi di Firenze;
- 1/9/2006 - 31/1/2007: Erasmus fellowship, given by Università degli Studi di Firenze.

Periods abroad:

- 1/9/2015 - 30/9/2016: Marie Curie INdAM Cofund fellow at the Institut de Mathématiques de Jussieu - Paris Rive Gauche di Parigi;
- 9 - 14/2/2015: Intensive research period at the Norwegian University of Science and Technology, Trondheim, Norway, invited by Dr. Karl-Mikael Perfekt;
- 1 - 16/6/2014: Intensive research period at Chapman University, Orange, CA, USA, invited by Prof. Daniele C. Struppa;
- 24/2 - 24/5/2014: Research period abroad at Institut Fourier, Université de Grenoble, France, under the supervision of Prof. Christine Laurent;
- 15/6 - 6/7/2013: Intensive research period at Chapman University, Orange, CA, USA, invited by Prof. Daniele C. Struppa;
- 1/9/2010 - 31/5/2011: Visiting Student at Massachusetts Institute of Technology, Cambridge, MA, USA, under the supervision of Prof. Michael Artin and Prof. Victor W. Guillemin;
- 1/9/2006 - 1/1/2007: Erasmus Student at Université Pierre et Marie Curie, Paris, France.

Conferences, workshops and schools attended:

- 12 - 16/9/2016, *Complex function theory, its generalizations and applications*, Istituto Nazionale di Alta Matematica “F. Severi”, Roma, Italy.
- 11 - 15/7/2016, *Differential Geometry in the Large*, Firenze, Italy.
- 13 - 15/6/2016, *13th Advanced Course in Operator Theory and Complex Analysis*, Lyon, France. CONTRIBUTED TALK: “About Carleson measures for the Dirichlet space on the bidisc”
- 6 - 10/6/2016, *Spring 2016 School*, mini-courses “Complex structures, spinors and projective geometry” by Simon Salamon and “Slice regular functions on real alternative \ast -algebras” by Riccardo Ghiloni and Alessandro Perotti, Firenze, Italy.
- 20 - 22/4/2016, *Special Hermitian metrics on non-Kähler manifolds*, Firenze, Italy.
- 21 - 23/1/2016, *Workshop Varietà reali e complesse: geometria, topologia e analisi armonica*, Scuola Normale Superiore, Pisa, Italy.
- 1/12/2015, *Hypercomplex Analysis and Geometry*, Ferrara, Italy.
- 7 - 12/9/2015, *XX Congresso U.M.I.*, Siena, Italy.
INVITED TALK: “Metriche invarianti associate allo spazio di Hardy quaternionico”
- 9 - 11/6/2015, *12th Advanced Course in Operator Theory and Complex Analysis*, Bologna, Italy. CONTRIBUTED TALK “Quaternionic Hankel operators”
- 1 - 5/6/2015, *Complex Analysis and Geometry - XXII*, Levico Terme (TN), Italy.
- 15/5/2015, *A Complex Geometry Day*, Centro di Ricerca Matematica “Ennio de Giorgi”, Pisa, Italy.
INVITED TALK: “Quaternionic Toric Manifolds”.
- 23 - 28/3/2015, *Komplex Analysis Weeklong School- KAWA 6*, Centro di Ricerca Matematica “Ennio de Giorgi”, Pisa, Italy.
- 5 - 7/3/2015, *Workshop Varietà reali e complesse: geometria, topologia e analisi armonica*, Scuola Normale Superiore, Pisa, Italy.
INVITED TALK: “Operatori di Hankel sui quaternioni”.
- 23/1/2015, *Incontro Nazionale di Analisi Ipercomplessa*, Firenze, Italy.
INVITED TALK: “Dagli operatori di Hankel alle misure di Carleson in una variabile quaternionica”.
- 19 - 23/10/2014, *Progressi recenti in geometria reale e complessa*, Levico Terme (TN), Italy.
INVITED TALK: “Invariant metrics associated with the quaternionic Hardy space”.
- 17 - 19/9/2014, *New trends in differential geometry*, Villasimius, (CA), Italy.
- 14 - 18/7/2014, *30th International colloquium on group theoretical methods in physics*, Ghent, Belgium.
INVITED TALK: “Invariant metrics associated with the quaternionic Hardy space”.

- 20 - 22/2/2014, *Workshop Varietà reali e complesse: geometria, topologia e analisi armonica*, Scuola Normale Superiore, Pisa, Italy.
- 23 - 25/10/2013, *Incontro FIRB - Geometria Differenziale e Teoria Geometrica delle Funzioni*, Firenze, Italy.
INVITED TALK: “Ideali di funzioni slice regolari sui quaternioni”.
- 2 - 7/6/2013, *Complex Analysis and Geometry - XXI*, Levico Terme (TN), Italia.
- 20 - 24/5/2013, *Hilbert Function Spaces*, Gargnano (BS), Italy.
CONTRIBUTED TALK: “Quaternionic Hardy spaces”.
- 21 - 23/3/2013, *Workshop Nuove direzioni di ricerca in Geometria Ipercomplessa*, International Centre for Theoretical Physics, Trieste, Italy.
INVITED TALK: “Spazi di Hardy sulla palla unitaria dei quaternioni”.
- 28/2 - 3/3/2013, *Workshop Varietà reali e complesse: geometria, topologia e analisi armonica*, Scuola Normale Superiore, Pisa, Italy.
- 14 - 19/10/2012, *Progressi recenti in geometria reale e complessa*, Levico Terme (TN), Italy.
INVITED TALK: “Landau-Toeplitz theorems for regular functions over quaternions”.
- 18 - 22/6/2012, *Workshop on the Corona Problem: connections between Operator Theory, Function Theory and Geometry*, Fields Institute, Toronto, Canada.
- 10 - 11/6/2012, *Geometria in Bicocca 2012*, Milano, Italy.
- 16/12/2011, *Workshop su temi di analisi ipercomplessa*, Trento, Italy.
INVITED TALK: “Il problema della corona per funzioni slice regolari”.
- 17 - 29/7/2011, *Toric Varieties in Cortona*, INdAM - MSRI - SMI Graduate Workshop, Cortona (AR), Italy.
- 13 - 17/6/2011, *Complex Analysis and Geometry - XX*, Levico Terme (TN), Italy.
- 16 - 19/5/2011, *Trends in Complex Dynamics*, Clay Mathematical Institute, Cambridge, MA, USA.
- 29/4 - 1/5/2011, *JDG 2011: Conference on Geometry and Topology*, Harvard University, Cambridge, MA, USA.

Seminars:

- 17/5/2016, *L'espace de Hardy quaternionique et la géométrie de la boule unité*, Séminaire d'analyse complexe et géométrie, Institut de Mathématiques de Jussieu - Paris Rive Gauche, Université de Paris 6, France.
- 29/1/2016, *L'espace de Hardy quaternionique et la géométrie de la boule unité*, Séminaire Gaston Darboux, Institut Montpellierain Alexander Grothendieck, Université de Montpellier 2, France.
- 12/3/2015, *The quaternionic Hardy space and the geometry of the unit ball*, Analysis Seminar “Bruno Pini”, Dipartimento di Matematica, Università degli Studi di Bologna.
- 16/10/2014, *Funzioni slice regolari sui quaternioni*, graduate and postgraduate students seminar, Dipartimento di Matematica, Università degli Studi di Bologna.
- 8/4/2014, *Métriques invariantes associées à l'espace de Hardy quaternionique*, Analysis seminar, Institut Fourier, Grenoble.
- 14/5/2013, *Funzioni slice regolari sulla palla unitaria dello spazio dei quaternioni*, Dipartimento di Matematica, Università degli Studi di Roma “La Sapienza”.
- 25/3/2013, *Funzioni slice regolari sulla palla unitaria dei quaternioni*, Dipartimento di Matematica e Informatica, Università degli Studi di Firenze.
- 6/2/2013, *Funzioni slice regolari sulla palla unitaria dei quaternioni*, Dipartimento di Matematica, Università degli Studi di Bologna.
- 6/12/2012, *Funzioni slice regolari sui quaternioni*, “Baby-Geometri” seminar, Dipartimento di Matematica, Università degli Studi di Pisa.
- 14/11/2011, *Il teorema di Bohr per funzioni slice regolari*, graduate school seminar, Dipartimento di Matematica, Università degli Studi di Firenze.
- 8/12/2010, *Functions of a quaternionic variable*, D. W. Weeks Lecture Series, Department of Mathematics, Massachusetts Institute of Technology.

Teaching experiences:

- March - June 2012, **Teaching assistant** for the master course (given by Prof. Graziano Gentili) *Istituzioni di Geometria Superiore* (Differential Geometry), Università degli Studi di Firenze.
- September 2012 - April 2013, **Teaching assistant** for the undergraduate course (given by Prof. Graziano Gentili and Dott. Marco Maggesi) *Geometria I* (Linear Algebra), Università degli Studi di Firenze.
- March 2013 - June 2013, **Teaching assistant** for the master course (given by Prof. Graziano Gentili) *Istituzioni di Geometria Superiore* (Differential Geometry), Università degli Studi di Firenze.
- November 2013 - February 2014, **Teaching assistant** for the undergraduate course (given by Prof. Nicola Arcozzi) *Analisi I* (Calculus), Università di Bologna, Corso di Laurea “Ingegneria Edile - Architettura”.
- November 2014 - February 2015, **Teaching assistant** for the undergraduate course (given by Prof. Nicola Arcozzi) *Analisi II* (Calculus), Università di Bologna, Corso di Laurea “Ingegneria Edile - Architettura”.
- March - June 2015 **Teaching assistant** for the undergraduate course (given by Prof. Otto Liess) *Analisi I* (Calculus), Università di Bologna, Corso di Laurea “Matematica”.
- September 2016 - June 2017 **Teacher** for the undergraduate course *Istituzioni di Matematiche* (Modulo cognomi N-Z), Laurea Magistrale ciclo unico in Architettura, Università di Firenze.

Research projects and affiliations:

SIR 2014 *Analytic aspects in complex and hypercomplex geometry*, principal investigator: Dr. Daniele Angella.

FIRB 2012 *Differential geometry and geometric functions theory*, principal investigator: Dr. Caterina Stoppato.

PRIN 2010/2011 *Real and complex manifolds: geometry, topology and harmonic analysis*, principal investigator: Prof. Fulvio Ricci.

GNSAGA of INdAM, member since January 2010.

Unione Matematica Italiana, member since January 2010.

Languages:

Italian native

English European level B2, Course Certificate, Bell School, Cambridge, UK

French European level C1, Diplôme Approfondi de Langue Française, Institute Français, Firenze

Other activities:

- member of the organizing committee of the workshop *Complex function theory, its generalizations and applications*, Istituto Nazionale di Alta Matematica “F. Severi”, Roma, Italy, september 2016;
- member of the scientific committee of the workshop *Nuove direzioni di ricerca in Geometria Ipercomplessa*, International Centre for Theoretical Physics, Trieste, Italy, march 2013;
- member of the organizing committee of the 2012 edition of the *Gara Matematica* at the Dipartimento di Matematica e Informatica, Università di Firenze, Italy;
- representative of the graduate students in the Doctoral school council of the Dipartimento di Matematica e Informatica, Università di Firenze, Italy, academic year 2011-2012.

Publications and preprints:**Publications**

- (1) C. DELLA ROCCHETTA, G. GENTILI, G. SARFATTI, *The Bohr Theorem for slice regular functions*, *Mathematische Nachrichten*, vol. 285 (17-18), p. 2093-2105 (2012), ISSN: 0025-584X, doi: 10.1002/mana.201100232.
- (2) C. DELLA ROCCHETTA, G. GENTILI, G. SARFATTI, *A Bloch-Landau Theorem for slice regular functions*, in *Advances in Hypercomplex Analysis* (I. Sabadini, D.C. Struppa, G. Gentili, M. Shapiro, and F. Sommen eds), p. 55-74, Berlin/Heidelberg: Springer (2013), ISBN: 9788847024441, doi: 10.1007/978-88-470-2445-8_4.
- (3) G. GENTILI, G. SARFATTI, *Landau-Toeplitz theorems for slice regular functions over quaternions*, *Pacific Journal of Mathematics*, vol. 265, no. 2, p. 381-404 (2013), ISSN: 0030-8730, doi: 10.2140/pjm.2013.265.381.
- (4) N. ARCOZZI, G. SARFATTI, *Invariant metrics for the quaternionic Hardy space*, *The Journal of Geometric Analysis*, vol. 25, no. 3, p. 2028-2059 (2015), doi:10.1007/s12220-014-9503-4.
- (5) N. ARCOZZI, G. SARFATTI, *The orthogonal projection on slice functions on the quaternionic sphere*, *Journal of Physics: Conference Series*, Vol. 597 (2015) 012011, doi:10.1088/1742-6596/597/1/012011.
- (6) G. GENTILI, G. SARFATTI, D.C. STRUPPA, *Ideals of regular functions of a quaternionic variable*, accepted for publication in *Mathematical Research Letters*, preprint available at <https://dl.dropboxusercontent.com/u/15440756/Ideals.pdf>.
- (7) G. SARFATTI, *Quaternionic Hankel operators and approximation by slice regular functions*, *Indiana University Mathematics Journal*, vol. 65, no. 3, p. 1735-1757 (2016) doi: 10.1512/iumj.2016.65.5896
- (8) G. SARFATTI, *The quaternionic Hardy space and the geometry of the unit ball*, *Bruno Pini Mathematical Analysis Seminar* (2015) doi: 10.6092/issn.2240-2829/5893.
- (9) N. ARCOZZI, K.M. PERFEKT, P. MOZOLYAKO, S. RICHTER, G. SARFATTI, *Some Hilbert Spaces related with the Dirichlet space*, *Concrete Operators*, vol. 3 (2016), p.94-101, doi: 10.1515/conop-2016-0011
- (10) G. GENTILI, A. GORI, G. SARFATTI, *A direct approach to quaternionic regular manifolds*, published online in *Mathematische Nachrichten*, doi: 10.1002/mana.201500489
- (11) N. ARCOZZI, G. SARFATTI, *From Hankel operators to Carleson measures in a quaternionic variable*, accepted for publication in the *Proceedings of the Edinburgh Mathematical Society*, preprint available at <http://arxiv.org/pdf/1407.8479v1.pdf>.
- (12) G. GENTILI, A. GORI, G. SARFATTI, *Quaternionic Toric Manifolds*, accepted for publication in the *Journal of Symplectic Geometry*, preprint available at <https://dl.dropboxusercontent.com/u/15440756/toricJSG.pdf>

Preprints

- (13) C. DE FABRITIIS, G. GENTILI, G. SARFATTI, *Quaternionic Hardy spaces*, preprint, <http://arxiv.org/pdf/1404.1234v1.pdf>
- (14) G. GENTILI, G. SARFATTI *The Mittag-Leffler Theorem for regular functions of a quaternionic variable*, preprint.

In preparation

- (15) N. ARCOZZI, K.M. PERFEKT, P. MOZOLYAKO, G. SARFATTI, *About Carleson measures for the Dirichlet space on the bidisc*, in preparation.
- (16) E. FALBEL, M. MACULAN, G. SARFATTI, *Configurations of flags in orbits of real forms*, in preparation.

PhD Thesis

- (17) G. SARFATTI, *Elements of function theory in the unit ball of quaternions*, PhD Thesis, Università degli Studi di Firenze 2013, <https://www.math.unifi.it/users/sarfatti/PhDGiulia.pdf>

Others

- (18) G. SARFATTI Exercises and solutions for the new edition of the book *Matematica. Comprendere e interpretare i fenomeni delle scienze della vita* (quinta edizione), V. Villani, G. Gentili, McGraw-Hill Milano (2012), ISBN: 9788838639616.
- (19) G. GENTILI, G. SARFATTI, D.C. STRUPPA, *A family of Cauchy-Riemann type operators*, preprint, <https://dl.dropboxusercontent.com/u/15440756/thetaolomorfe.pdf>

Firenze, 2 December 2016

Giulia Sarfatti