

Roberta Bonacina

Curriculum Vitae

✉ r.bonacina92@gmail.com
Born on September 20, 1992 in Italy

Current position

2021–present **High school math teacher**, *IIS Jean Monnet*, Mariano Comense.

Past positions

2020–2021 **Postdoctoral researcher**, *Universität Tübingen*, Tübingen, Carl Friedrich von Weizsäcker Center.

Education

2016–2019 **PhD in Computer Science and Computational Mathematics**, *Università degli Studi dell'Insubria*, Como, Department of Science and High Technology.

Thesis-title: *Semantics for Homotopy Type Theory*, Advisor: Dr. Marco Benini.

2014–2016 **Master in Mathematics**, *Università degli Studi dell'Insubria*, Como, Department of Science and High Technology.

Final grade 110/110 cum laude.

Thesis-title: *Point-Free Categorical Semantics for Martin-Löf Type Theory*, Advisor: Dr. Marco Benini.

2011–2014 **Bachelor in Mathematics**, *Università degli Studi dell'Insubria*, Como, Department of Science and High Technology.

Final grade 110/110 cum laude.

Thesis-title: *Presentazioni di gruppi*, Advisor: Dr. Valerio Monti.

2006–2011 **Scientific high school diploma**, *Liceo Scientifico Galileo Galilei*, Erba.

Final grade 100/100.

Publications

Journal articles

2020 R. Bonacina, D. Wessel, *Ribbenboim's order extension theorem from a constructive point of view*, *Algebra Universalis* (2020), 81:5.

2019 M. Benini, R. Bonacina, *Well-quasi orders in a categorical setting*, *Archive for Mathematical Logic* (2019), 58, pp 501–526.

Book chapters

2021 M. Benini, R. Bonacina, *Ad-Hoc Semantics to Study Structural Properties of Types*, K. Mainzer, H. Schwichtenberg, P. Schuster eds., *Proof and Computation*, World Scientific.

Conferences

- 2021 B. Ahrens, R. Bonacina, N. Kraus *Syntax for two-level type theory*, HoTT/UF 2021.
- 2021 R. Bonacina, B. Ahrens, *Syntax for two-level type theory*, TYPES 2021.
- 2020 M. Benini, R. Bonacina, *A proof-theoretical semantics for homotopy type theory*, HoTT/UF 2020.
- 2020 M. Benini, R. Bonacina, *Natural Numbers in Homotopy Type Theory*, TYPES 2020, Università di Torino.

Submitted

- R. Bonacina, D. Wessel, *A formal approach to Menger's theorem*.

Presentations

Conference talks

- 2021 *Syntax for two-level type theory*, HoTT/UF 2021, 17th July 2021.
- 2021 *Syntax for two-level type theory*, TYPES 2021, 15th June 2021.
- 2020 *A proof-theoretical semantics for homotopy type theory*, HoTT/UF 2020, 6th July 2020.

Seminars

- 2021 *Two-level type theory*, Logic Seminar Verona, Università degli studi di Verona, 4th June 2021.
- 2019 *A simpler semantics for a large fragment of Homotopy Type Theory*, Università degli studi di Verona, 29th October 2019.
- 2018 *Sketches of Homotopy type theory*, Università degli studi di Milano-Bicocca, 6th December 2018.
- 2017 *Point-free categorical semantics for Martin-Löf type theory*, School of Information Science, JAIST, 18th May 2017.

Teaching

Courses

- 2021 Half of the course “Advanced course in foundations of mathematics”, 24h, *Università degli Studi di Verona*, Verona, Department of Computer Science.
Borrowed by the doctoral programme in Mathematics, *Università degli Studi di Trento*, as part of the PhD course “From Hilbert’s Programme to Dynamical Algebra”.
- 2021 Mini-course on “Introduction to Homotopy Type Theory”, 3h, *Universität Tübingen*, Tübingen, Carl Friedrich von Weizsäcker-Kolloquium.
- 2020 Half of the course “Advanced course in foundations of mathematics”, 24h, *Università degli Studi di Verona*, Verona, Department of Computer Science.

Tutorings

- 2016 Algebra II, 12h, Chair: Dr. V. Monti, *Università degli Studi dell’Insubria*, Como, Department of Science and High Technology.

- 2015 Algebra I, 12h, Chair: Dr. V. Monti, *Università degli Studi dell'Insubria*, Como, Department of Science and High Technology.
- 2015 Analisi I, 10h, Chair: Prof. A. G. Setti, *Università degli Studi dell'Insubria*, Como, Department of Science and High Technology.

International experience

- 2017 Secondment at University of Canterbury, Christchurch, New Zealand. Hosted by Prof. D. Bridges, under the EU CORCON project (15th October 2017 – 15th December 2017).
- 2017 Secondment at JAIST, Nomi, Ishikawa, Japan. Hosted by Prof. H. Ishihara, under the EU CORCON project (20th April 2017 – 20th June 2017).

Other experiences

- 2021 Co-organisation of the workshops “Type Theory in Type Theory” and “Computation in Face of Incompleteness” in the conference “Celebrating 90 years of Gödel's incompleteness theorems”, *Universität Tübingen*.
- 2016–2019 PhD Student's representative in the PhD Program in Computer Science and Computational Mathematics, *Università degli Studi dell'Insubria*, Como, Department of Theoretical and Applied Sciences.
- 2015–2016 Student's representative in CCS (Consiglio di Corso di Studio) in Mathematics, *Università degli Studi dell'Insubria*, Como, Department of Science and High Technology.
- 2013–2016 Member of AiQua (Gruppo di gestione Assicurazione della Qualità), *Università degli Studi dell'Insubria*, Como, Department of Science and High Technology.

Conferences, schools and courses attended

- 2021 Workshop on Homotopy Type Theory / Univalent Foundations, The Internet.
Conference “Celebrating 90 years of Gödel's incompleteness theorems”, *Universität Tübingen*.
International Conference on Types for Proofs and Programs.
Spring school on Homotopy type theory, EPIT.
- 2020 Workshop “Mathematical Logic: Proof Theory, Constructive Mathematics”, *Oberwolfach*.
Workshop “Divario di genere in Matematica” on the gender gap in Mathematics, *Università di Milano*, Department of Mathematics.
Workshop on Homotopy Type Theory / Univalent Foundations, The Internet.
Courses on Psychology, Education, Anthropology and Pedagogy (24CFU) which are needed in Italy to teach in high schools, *Università telematica e-Campus*.
- 2019 Autumn school “Proof and computation”, *Haus der bayerischen Landwirtschaft*, Herrsching.
Course “Foundations of modal logic”, Prof. Achille Frigeri, *Università degli Studi dell'Insubria*, Department of Science and High Technology.

- 2018 Autumn school “Proof and computation”, *Aurachhof*, Fischbachau.
Summer school and conference “Toposes in Como”, *Università degli Studi dell’Insubria*, Como.
Summer school “Types, Sets and Constructions”, *Hausdorff Research Institute for Mathematics (HIM)*, Bonn.
Course “An introduction to Networks”, Dr. Francesca Arrigo, *Università degli Studi dell’Insubria*, Como, Department of Science and High Technology.
- 2017 Course “Topos Theory”, Dr. Iosif Petrakis, *Università degli Studi di Verona*, Department of Computer Science.

Languages

- Italian Mother tongue
English Advanced (C1)

Computer skills

- Basic JAVA, SAS (*Attendance at the formation course "Programmazione SAS 1: fondamenti", 2014*)
Intermediate Matlab, L^AT_EX, Microsoft Office

Scholarships

- 2016–2019 PhD fellowship, *Università degli Studi dell’Insubria*.
2016 Renewal of the scholarship for first-year Master’s students, *Università degli Studi dell’Insubria*.
2015 Scholarship for first-year Master’s students, *Università degli Studi dell’Insubria*.