Enrico Ghiorzi

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Employment

04/2023–present	**Assegnista di ricerca (postdoctoral researcher)**, *DIBRIS, Università degli Studi di Genova*, Genoa (Italy).
04/2023–present	**Associate researcher**, *Humanoid Sensing and Perception, Center for Robotics and Intelligent Systems, Istituto Italiano di Tecnologia*, Genoa (Italy).
10/2021–03/2023	**Postdoctoral researcher**, *Humanoid Sensing and Perception, Center for Robotics and Intelligent Systems, Istituto Italiano di Tecnologia*, Genoa (Italy).
10/2019–06/2021	**Postdoctoral researcher**, *Appalachian State University*, Boone (North Carolina). Project topic: categorical semantics of advanced data types (under the direction of Prof. Patricia Johann).

Education

10/2013–11/2019	**PhD in Mathematics**, *University of Cambridge*, Cambridge (United Kingdom), defended in September 2019. Thesis title: *Internal enriched categories* (supervised by Prof. Martin Hyland) https://doi.org/10.17863/CAM.45286.
10/2011–09/2013	**MSc in Mathematics**, *Università degli Studi di Genova*, Genoa (Italy), *110/110 cum laude*. Thesis title: *Sobriety and Equilogical Spaces* (supervised by Prof. Giuseppe Rosolini).
09/2008–09/2011	**BSc in Mathematics**, *Università degli Studi di Genova*, Genoa (Italy), *110/110 cum laude*. Thesis title: *Gödel's Proof of Completeness Theorem* (supervised by Prof. Giuseppe Rosolini).

Publications

GADTs Are Not (Even Partial) Functors, *Pierre Cagne, Enrico Ghiorzi, and Patricia Johann*, accepted for publication, Mathematical Structures in Computer Science..

2023 **Internalization and enrichment via spans and matrices in a tricategory**, *Bojana Femic; Enrico Ghiorzi*, Journal of Algebraic Combinatorics, https://doi.org/10.1007/s10801-022-01188-1.

2023 **Learning Linear Temporal Properties for Autonomous Robotic Systems**, *Enrico Ghiorzi; Michele Colledanchise; Gianluca Piquet; Stefano Bernagozzi; Armando Tacchella*, IEEE Robotics and Automation Letters, https://doi.org/10.1109/lra.2023.3263368.

2022 **Internal Enriched Categories**, Applied Categorical Structures, https://doi.org/10.1007/s10485-022-09678-w.

2022 **(Deep) Induction Rules for GADTs**, *with Johann*, CPP 2022: Proceedings of the 11th ACM SIGPLAN International Conference on Certified Programs and Proofs, https://doi.org/10.1145/3497775.3503680.

2021 **Parametricity for Nested Types and GADTs**, *with Johann*, Logical Methods in Computer Science, https://doi.org/10.46298/lmcs-17(4:23)2021.

2021 **Parametricity for Primitive Nested Types**, *w. Jeffries and Johann*, Foundations of Software Science and Computation Structures 2021 (FoSSaCS'21), https://doi.org/10.1007/978-3-030-71995-1_17.

2021 **GADTs, Functoriality, Parametricity: Pick Two**, *with Jeffries and Johann*, Proceedings, Logical and Semantic Frameworks with Applications (LSFA'21), arXiv version https://arxiv.org/abs/2105.03389.

preprint **Completeness for internal categories**, submitted for review at Theory and Applications of Categories, arXiv version https://arxiv.org/abs/2004.08741.

Conferences and Seminars

2024 **Intro to Behavior Trees and Tooling**, *ACM SIGSOFT Summer School for Software Engineering in Robotics, Bruxelles, Belgium*.

2024 **Presentation of the CONVINCE project**, *AIoD Technical Contributor Board Meeting*.

2023 **Presentation of the CONVINCE project**, *DIH4AI project's final event*.

2023 **Presentation of the CONVINCE project**, *AIoD Community Forum and ICT-49 Final Event*.

2022	**(Deep) induction rules for GADTs**, *Certified Programs and Proofs (CPP 2022)*.
2021	**GADTs, Functoriality, Parametricity: Pick Two**, *16th Logical and Semantic Frameworks with Applications (LSFA 2021)*.
2020	**Internal enriched categories**, *New York City Category Theory Seminar*.
2020	**Complete internal categories**, *ItaCa Fest 2020*.
2019	**Enriched internal categories**, *A Workshop for John Power, Department of Computer Science, University of Bath*.
2018	**Categorie interne arricchite**, *Teoria e Applicazioni delle Categorie, DIMA-DIBRIS, Università degli Studi di Genova*.
2017	**Enriched internal categories**, *101st PSSL, University of Leeds*.
2014	**Type theory and regular completions**, *Category Theory Seminar, University of Cambridge*.

Teaching Experience

2024	Mentoring Master's students' final project for the Software Engineering course (7 students divided into 3 groups).
2024	*Professore a contratto* (lecturer) for the "Informatica e Computazione" (Computer Science and Computation) 2nd year undergraduate course of *Ingegnieria Informatica* (Computer Engineering) at DIBRIS, UniGe (24h total).
2022	Master's thesis co-advisor, on the topic of formal methods applied to verification and control of autonomous robotic systems.
2022	Attended workshop on effective teaching in higher education, with particular emphasis on teaching to a multi-cultural classroom.
2022	Lecturer (together with other three lecturers) for the category theory online course organized by ItaCa https://progetto-itaca.github.io/pages/course.html.
2014	Graduate teaching assistant for "Logic and Set Theory" (3rd year undergraduate course) for the Department of Pure Mathematics and Mathematical Statistics, University of Cambridge.

Academic Service

2024	Member of the organising committee for ECCL 24 — a celebration of Pino Rosolini's 70th birthday https://logic.dima.unige.it/eccl-24/, Genoa, Italy.

| 2024 | Member of the organising committee for ACM SIGSOFT Summer School for Software Engineering in Robotics https://www.scive-nia.com/en/event/summer-school-for-software-engineering-in-robotics_993/ (week-long summer school), Bruxelles, Belgium. |
| 2021 | Member of the organising committee for the 2nd ItaCa Workshop https://genoa-logic-group.github.io/itaca-workshop-2021/, Genoa, Italy. |

Funding, Scholarships and Grants

| 2013-2018 | **EPSRC** | (Engineering and Physical Sciences Research Council). Covering University and College fees. |
| 2013-2018 | **Cambridge Trust** | Covering living expenses. |

Qualifications

| 2021 | Maître de conférences (N° de qualification 21225358290). |

Awards

| 2014 | **John Rose Prize** | Awarded by King's College, Cambridge, for "the best explanation of a scientific principle of general interest" with the essay Turing Machines and Computability (on a par with another student). |
| 2010 | **iris Prize** | Awarded by Università degli Studi di Genova for being the best first-year undergraduate student in Mathematical, Physical and Natural Sciences (on a par with two other students). |

Languages

| Italian | Native speaker |
| English | Near-native proficiency (C2 as self-assessed using CEFRL) |