

## UNIVERSITÀ DEGLI STUDI DI MILANO

selezione pubblica per n.1 posto di Ricercatore a tempo determinato in tenure track (RTT) per il settore concorsuale 01/B1 - INFORMATICA, settore scientifico-disciplinare INF/01 - INFORMATICA presso il Dipartimento di Informatica Giovanni Degli Antoni, (avviso bando pubblicato sulla G.U. 97 del 22/12/2023) Codice concorso 5471

## Curriculum Vitae of GABRIELE VANONI

### Personal Information

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- Date of birth: 04/06/1994
- Nationality: Italian
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- Email: [vanonigabriele@gmail.com](mailto:vanonigabriele@gmail.com)
- Affiliation: IRIF, CNRS, Université Paris Cité, France



### Work Experience

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- 09/2023- IRIF, CNRS, UNIVERSITÉ PARIS CITÉ  
*Postdoctoral Fellow (MathInGP Cofund Marie Skłodowska-Curie/FSMP grant). Advisor: Delia Kesner*  
*Topic: Quantitative Syntax and Semantics of Programming Languages*
- 09/2022-08/2023 INRIA SOPHIA ANTIPOLIS  
*Postdoctoral Researcher, Equipe Focus. Advisor: Martin Avanzini*  
*Topic: Formal Complexity Analysis of Randomized and Cryptographic Algorithms*

### Education

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- 02-06/2022 YALE UNIVERSITY  
*Visiting Assistant in Research (Marie Skłodowska-Curie Research and Innovation Staff Exchange)*  
*Topic: Coeffects and Certified Abstraction Layers. Advisor: Prof. Zhong Shao*
- 2018-2022 UNIVERSITÀ DI BOLOGNA  
*PhD in Computer Science and Engineering. Grade: Excellent cum Laude, June 2022*  
*Thesis: On Reasonable Space and Time Cost Models for the  $\lambda$ -Calculus. Advisor: Prof. U. Dal Lago*
- 2016-2018 POLITECNICO DI MILANO  
*Master of Science in Computer Science and Engineering. Grade: 110/110 cum Laude, October 2018*  
*Thesis: On Randomised Strategies in the  $\lambda$ -calculus. Advisor: Prof. Ugo Dal Lago*
- 2013-2016 POLITECNICO DI MILANO  
*Bachelor of Science in Computer Science and Engineering. Grade: 110/110 cum Laude, July 2016*  
*Final project in Software Engineering. Advisor: Prof. Carlo Ghezzi*
- 2008-2013 LICEO SCIENTIFICO STATALE PAOLO FRISI  
*"Diploma di maturità scientifica P.N.I.", July 2013*

### Teaching

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- 2023-2024 UNIVERSITÉ PARIS CITÉ  
*Adjunct Professor for the "Proofs and Programs" course, 24 hours*
- 2020-2021 UNIVERSITÀ DI BOLOGNA  
*Laboratory tutor for the "Algorithms and Data Structure in Biology" course, 30 hours*

2019-2022 UNIVERSITÀ DI BOLOGNA

*Teaching assistant for the “Optimization” course, 16 hours*

2019-2022 UNIVERSITÀ DI BOLOGNA

*Laboratory tutor for the “Logic for Computer Science” course, 16 hours*

2017 POLITECNICO DI MILANO

*Laboratory tutor for the “Software Engineering” course, 30 hours*

(Co-)supervised students: Oscar Barreca (B.Sc.). Thesis: Compression of Labeled Spine Trees

**Research Projects**

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- 2019-2022 Member of the ERC Consolidator project Diapason
- 2019- Member of the International Research Network - Linear Logic
- 2018-2022 Member of the joint INRIA/JSPS project Crecogi
- 2022- Member of the ANR project - Probabilistic Program Semantics

**Research Visits**

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- 2023 LIP, ENS Lyon, visiting Lê Thành Dũng Nguyễn, one week
- 2022 IRIF, Université Paris Cité, visiting Claudia Faggia, one week
- 2022 BUCS, Boston University, visiting Marco Gaboardi, one week
- 2020 DMFI, Università di Udine, visiting Pietro di Gianantonio, one week
- 2020 LIPN, Université Sorbonne Paris Nord, visiting Damiano Mazza, five months
- 2019 RIMS, Kyoto University, visiting Koko Muroya, one week

**Service to the Community**

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- Reviewer for FSCD 2019, LICS 2020, FoSSaCS 2021, ICALP 2021, PPDP 2021, MFPS 2022, CSL 2022, FSCD 2023, FCT 2023, LMCS.
- Co-organizer of the Workshop “Directions and perspectives in the  $\lambda$ -calculus”. Bologna, 2024.
- Member of the Artifact Evaluation Committee of ICFP 2021, POPL 2024.
- Member of Italian Association of Logics and Applications, IC-EATCS.
- Member of the council of the degree programme in Computer Science and Engineering. Politecnico di Milano, 2015-2018.

**Other Skills**

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LANGUAGES: Italian (mother tongue), English (C2), French (B2)

**Grants, Honours, and Awards**

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- Winner of the Ackermann Award for Outstanding Dissertation in Logic in Computer Science 2023 (awarded by EACLS).
- Winner of the E.W. Beth Dissertation Prize 2023 (awarded by FoLLI).
- Best Italian PhD thesis in theoretical computer science 2023 (awarded by the Italian Chapter of EATCS).
- Invited speaker at TLLA 2023, DCM 2023.
- MathInGreaterParis Postdoctoral Fellowship (2023-2025). Cofunded by Marie Skłodowska-Curie Actions and FSMP.
- Winner of the Distinguished Paper Award at ICFP 2022.
- Paper selected for the LMCS special issue of LICS 2022.

## Publications

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### PhD Thesis

Gabriele Vanoni. On Reasonable Space and Time Cost Models for the  $\lambda$ -Calculus. *Università di Bologna*, 2022. DOI: 10.48676/unibo/amsdottorato/10276

### International Journals

1. Martin Avanzini, Gilles Bathes, Benjamin Gregoire, Georg Moser and Gabriele Vanoni  
Hopping Proofs of Expectation-Based Properties: Applications to Skiplists and Security Proofs  
Accepted at OOPSLA 2024.
2. Claudia Faggian, Daniele Pautasso and Gabriele Vanoni.  
Higher-Order Bayesian Networks, Exactly.  
*PACMPL Vol. 8 (POPL)*, 2024. DOI: <https://doi.org/10.1145/3632926>
3. Beniamino Accattoli, Ugo Dal Lago and Gabriele Vanoni  
Multi Types and Reasonable Space  
*PACMPL Vol. 6 (ICFP)*, 2022. **Winner of the Distinguished Paper Award**. DOI: <https://doi.org/10.1145/3547650>
4. Beniamino Accattoli, Ugo Dal Lago and Gabriele Vanoni  
The (In)Efficiency of Interaction  
*PACMPL Vol. 5 (POPL)*, 2021. DOI: <https://doi.org/10.1145/3434332>
5. Ugo Dal Lago and Gabriele Vanoni  
On randomised strategies in the  $\lambda$ -calculus  
*Theoretical Computer Science*, 813:100-116, 2020. DOI: <https://doi.org/10.1016/j.tcs.2019.09.033>

### Conference Proceedings

1. Francesco Gavazzo, Riccardo Treglia and Gabriele Vanoni  
Monadic Intersection Types, Relationally  
Accepted at ESOP 2024.
2. Ugo Dal Lago and Gabriele Vanoni  
(Not So) Boring Abstract Machines.  
*Proceedings of the 24th ICTCS*, 2023.
3. Beniamino Accattoli, Ugo Dal Lago and Gabriele Vanoni  
Reasonable Space for the  $\lambda$ -Calculus, Logarithmically  
*Proceedings of the 37th LICS*, 2022. **Selected for the LMCS Special Issue**. DOI: <https://doi.org/10.1145/3531130.3533362>
4. Beniamino Accattoli, Ugo Dal Lago and Gabriele Vanoni  
The Space of Interaction  
*Proceedings of the 36th LICS*, 2021. DOI: <https://doi.org/10.1109/LICS52264.2021.9470726>
5. Beniamino Accattoli, Ugo Dal Lago and Gabriele Vanoni  
The Machinery of Interaction  
*Proceedings of the 22nd PPDP*, 2020. DOI: <https://doi.org/10.1145/3414080.3414108>
6. Ugo Dal Lago and Gabriele Vanoni  
On Randomised Strategies in the  $\lambda$ -Calculus  
*Proceedings of the 19th ICTCS*, 2018.

### Drafts

1. Lê Thành Dũng Nguyễn and Gabriele Vanoni  
The Linearity of Transducers  
*Manuscript in preparation*.
2. Beniamino Accattoli, Ugo Dal Lago and Gabriele Vanoni  
Reasonable Space for the  $\lambda$ -Calculus, Logarithmically  
Submitted to the LMCS special issue for LICS 2022.

### Others

1. Francesco Gavazzo, Riccardo Treglia and Gabriele Vanoni  
Monadic Intersection Types, Relationally  
*29th International Conference on Types for Proofs and Programs, 2023.*
2. Beniamino Accattoli, Ugo Dal Lago and Gabriele Vanoni  
A Log-Sensitive Encoding of Turing Machines in the  $\lambda$ -Calculus  
*Unpublished, 2023.*
3. Beniamino Accattoli, Ugo Dal Lago and Gabriele Vanoni  
Interacting Seems Unreasonable, in Time and Space  
*Workshop on Intersection Types and Related Systems, 2021.*
4. Beniamino Accattoli, Ugo Dal Lago and Gabriele Vanoni  
The Geometry of Abstract Machines  
*Workshop on Trends in Linear Logic and Applications, 2019.*

### Invited Seminars

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1. Computational complexity, Compositionality and the  $\lambda$ -Calculus. IHES, October 2023.
2. Monadic Intersection Types, CHoCoLa Seminar, May 2023.
3.  $\lambda$ -Calculus and Reasonable Space, IRIF, November 2022.
4. Reasonable Space for the  $\lambda$ -Calculus, Logarithmically, Boston University, May 2022.
5. The Time and Space of Interaction, Rencontres CHoCoLa, April 2021.
6. On Higher-Order (In)Efficiency, Université Sorbonne Paris Nord, October 2020.
7. The Complexity of Interaction Abstract Machines, University of Bath, June 2020.
8. The Complexity of Interaction Abstract Machines, École polytechnique, June 2020.
9. The Complexity of Interaction Abstract Machines, Université Sorbonne Paris Nord, April 2020.
10. The Geometry of Abstract Machines, Kyoto University, July 2019.

### Speaker at Conferences

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- Principles of Programming Languages (POPL), 17-19/01/2024, London.
- Italian Conference on Theoretical Computer Science (ICTCS), 13-15/09/2023, Palermo.
- TYPES for proofs and Programs 2023, Valencia.
- Logic in Computer Science (LICS), 02-05/08/2022, Haifa.
- Logic in Computer Science (LICS), 29/06/2021-02/07/2021, online.
- Principles of Programming Languages (POPL), 17-22/01/2021, online.
- Principles and Practice of Declarative Programming (PPDP), 08-10/09/2020, online.
- Italian Conference on Theoretical Computer Science (ICTCS), 18-20/09/2018, Urbino.

Parigi, 22/01/2024