

Thomas Seiller

Curriculum Vitae

LIPN – UMR CNRS 7030
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Positions

- 2018– **Research Scientist, CNRS**
Chargé de Recherche 1^{ère} classe (Research Tenured Position, Associate Professor level)
Laboratory: Laboratoire d'Informatique de Paris Nord (LIPN), Paris 13 University.
- 2015–2018 **Post-Doctoral Researcher, University of Copenhagen**
Marie Curie Individual Fellowship (Horizon 2020)
- 2014–2015 **Post-Doctoral Researcher, Paris 7 University**
- 2013–2014 **Post-Doctoral Researcher, IHÉS and IHP**
CARMIN post-doctoral fellowship
- 2012–2013 **Post-Doctoral Researcher, INRIA**
- 2011–2012 **Assistant Professor (Computer Science), Université de Savoie**
- 2008–2011 **Research and Teaching Assistant (Mathematics), Université de la Méditerranée**

Grants/Awards

- 2023 **Two-years Interdisciplinary project "AlgoFormI" (10K€ for 2023)**, MITI – CNRS, Call "Aide à la décision"
- 2023 **Emergence project "FormA" (6.4K€)**, Annual joint call, INS2I – CNRS
- 2022 **DySCo JCJC project (258K€)**, 2022 ANR call
Dynamical Systems and Computation: a logical approach
- 2022 **Doctoral fellowship (110K€)**, VINCI program, Université Franco-Italienne (UFI)
- 2021 **International Collaboration Project (10K€)**, INS2I – CNRS
Participants: University of Copenhagen and University of Aarhus.
- 2020 **Two-years Scientific Project (20K\$)**, Thomas Jefferson Fund, FACE Foundation
Participants: School of Computer Science at Augusta University (local head: Clément Aubert).
- 2020 **Scientific Project (67K€)**, DIM RFSI, Ile-de-France region
Participants: Maxime Lucas, Damiano Mazza, Samuel Mimram.
- 2020 **International Collaboration Project (7K€)**, INS2I – CNRS
Participants: University of Copenhagen and University of Aarhus.
- 2019 **Exploratory Project (7K€)**, PEPS Blanc 2019, INS2I – CNRS
- 2018 **Young Investigator Project (7K€)**, JCJC 2018 call, INS2I – CNRS
- 2015 **Marie Curie Individual Fellowship (212K€)**, Call H2020-MSCA-IF-2014
- 2015 **Best Paper Award, An intensionally fully-abstract sheaf model for π** , CALCO 2015
- 2013 **CARMIN postdoctoral fellowship**
Combined stay at the "Institut des Hautes Études Scientifiques" and the "Institut Henri Poincaré"

- 2008 **PhD fellowship**, from the French ministry for Higher Education and Research
2007 **"Bourse d'excellence"**, from the French ministry for Higher Education and Research

Supervision

- Postdoc **Morgan Rogers**, Sorbonne Paris Nord, December 2021 – August 2023
Postdoc **Thomas Rubiano**, Sorbonne Paris Nord, June 2021 – August 2021
Postdoc **Maxime Lucas**, Sorbonne Paris Nord, September 2020 – May 2021
PhD **Yasmine Laghjichi**, Sorbonne Paris Nord University, from October 2023
PhD **Elies Harington**, École Polytechnique, from September 2022
PhD **Valentin Maestracci**, Aix-Marseille University, from September 2022
PhD **Adrien Ragot**, Sorbonne Paris Nord University & Università Roma Tre, from September 2022
PhD **Ulysse Léchine**, Sorbonne Paris Nord University, from September 2021
PhD **William Troiani**, University of Melbourne, from December 2020
PhD **Sambo Boris Eng**, Sorbonne Paris Nord University, October 2019 – June 2023
PhD **Pierre-Yves Coursolles**, École Polytechnique, October 2018 – February 2022
PhD **Nguyễn Lê Thành Dũng**, Sorbonne Paris Nord University, September 2018 – December 2021
Master **Yasmine Laghjichi**, Paris 1 University, April – Septembre 2023
Master **Mohamed Maiza**, Paris 7 University, March – August 2023
Master **Sambo Boris Eng**, Paris 7 University, March – August 2019
Master **Nguyễn Lê Thành Dũng**, ÉNS Paris, January – July 2018
Licence **Paul Séjourné**, Sorbonne Université, February – June 2020
Licence **Derek So**, University of Cambridge, June – September 2019
Licence **Seng Beng Goh**, University of Cambridge, June – September 2018

Education

- PhD **Mathematics**, Aix-Marseille University
Master **Mathematical Logic and Foundations of Computer Science**, U. Paris 7
Maitrise **Philosophy**, Paris 1 University
Licence **Mathematics**, Strasbourg 1 University

Publications (Peer Reviewed)

- Journal **From abstraction and indiscernibility to classification and types: revisiting Hermann Weyl's theory of ideal elements**, with J. B. Joinet, *Kagaku tetsugaku* 53, 2021
[DOI: 10.4216/jpssj.53.2_65](https://doi.org/10.4216/jpssj.53.2_65)
Journal **Interaction Graphs: Exponentials**, *Logical Methods in Computer Science* 15 (2019), [10.23638/LMCS-15\(3:25\)2019](https://doi.org/10.23638/LMCS-15(3:25)2019)
Journal **Coherent Interaction Graphs: A Non-Deterministic Geometry of Interaction for MLL**, *EPTCS post-proceedings of Linearity-TLLA 2018*, with L.T.D. Nguyễn, [DOI: 10.4204/EPTCS.292.6](https://doi.org/10.4204/EPTCS.292.6)
Journal **Interaction Graphs: Nondeterministic Automata**, *ACM Transactions in Computational Logic* 19 (2018), [DOI: 10.1145/3226594](https://doi.org/10.1145/3226594)

- Journal **A Correspondence between Maximal Abelian Sub-Algebras and Linear Logic Fragments**, *Mathematical Structures in Computer Science* 28 (2018), pp. 77–139, DOI: [10.1017/S0960129516000062](https://doi.org/10.1017/S0960129516000062)
- Journal **An intensionally fully-abstract sheaf model for π (extended version)**, *Logical Methods in Computer Science* 13 (2017), with C. Eberhart, T. Hirschowitz, DOI: [10.23638/LMCS-13\(4:9\)2017](https://doi.org/10.23638/LMCS-13(4:9)2017)
- Journal **Interaction Graphs: Graphings**, *Annals of Pure and Applied Logic* 168 (2017), pp. 278–320, DOI: [10.1016/j.apal.2016.10.007](https://doi.org/10.1016/j.apal.2016.10.007)
- Journal **Logarithmic Space and Permutations**, *Information and Computation* 248 (2016), pp. 2–21, with C. Aubert, DOI: [10.1016/j.ic.2014.01.018](https://doi.org/10.1016/j.ic.2014.01.018)
- Journal **Characterizing co-NL by a Group Action**, *Mathematical Structures in Computer Science* 26 (2016), pp. 606–663, with C. Aubert, DOI: [10.1017/S0960129514000267](https://doi.org/10.1017/S0960129514000267)
- Journal **Interaction Graphs: Additives**, *Annals of Pure and Applied Logic* 167 (2016), pp. 95–154, DOI: [10.1016/j.apal.2015.10.001](https://doi.org/10.1016/j.apal.2015.10.001)
- Journal **Interaction Graphs: Multiplicatives**, *Annals of Pure and Applied Logic* 163 (2012), pp. 1808–1837, DOI: [10.1016/j.apal.2012.04.005](https://doi.org/10.1016/j.apal.2012.04.005)
- Conference **pymwp: A Static Analyzer Determining Polynomial Growth Bounds**, ATVA 2023, with C. Aubert, N. Rusch, T. Rubiano
- Conference **Distributing and Parallelizing Non-canonical Loops**, VMCAI 2023, with C. Aubert, N. Rusch, T. Rubiano, DOI: [10.1007/978-3-031-24950-1_1](https://doi.org/10.1007/978-3-031-24950-1_1)
- Conference **mwp-Analysis Improvement and Implementation: Realizing Implicit Computational Complexity**, FSCD 2022, with C. Aubert, N. Rusch, T. Rubiano, DOI: [10.4230/LIPIcs.FSCD.2022.26](https://doi.org/10.4230/LIPIcs.FSCD.2022.26)
- Conference **A cartesian bicategory of polynomial functors in homotopy type theory**, 37th Conference on Mathematical Foundations of Programming Semantics (MFPS 2021), with E. Finster, S. Mimram, and M. Lucas, DOI: [10.4204/EPTCS.351.5](https://doi.org/10.4204/EPTCS.351.5)
- Conference **Loop Quasi-Invariant Detection**, International Symposium on Automated Technology for Verification and Analysis (ATVA 2017), with J.-Y. Moyén and T. Rubiano, DOI: [10.1007/978-3-319-68167-2_7](https://doi.org/10.1007/978-3-319-68167-2_7)
- Conference **Interaction Graphs: Full Linear Logic**, ACM/IEEE Logic in Computer Science (LICS 2016), pp. 427–436, DOI: [10.1145/2933575.2934568](https://doi.org/10.1145/2933575.2934568)
- Conference **Unary Resolution: Characterizing Ptime**, 19th International Conference on Foundations of Software Science and Computation Structures (FoSSaCS 2016), with C. Aubert and M. Bagnol, DOI: [10.1007/978-3-662-49630-5_22](https://doi.org/10.1007/978-3-662-49630-5_22)
- Conference **An intensionally fully-abstract sheaf model for π** , 6th Conference on Algebra and Coalgebra in Computer Science (CALCO 2015), with C. Eberhart and T. Hirschowitz, DOI: [10.4230/LIPIcs.CALCO.2015.86](https://doi.org/10.4230/LIPIcs.CALCO.2015.86)
- Conference **Logic Programming and Logarithmic Space**, Lecture Notes in Computer Science Vol. 8858 (Proceedings of APLAS 2014), with C. Aubert, M. Bagnol, and P. Pistone, DOI: [10.1007/978-3-319-12736-1_3](https://doi.org/10.1007/978-3-319-12736-1_3)
- Chapter **Verificationism and classical realizability**, In C. Baskent (Ed.) *Perspectives on Interrogative Models of Inquiry* (Springer), with A. Naibo and M. Petrolo, DOI: [10.1007/978-3-319-20762-9_9](https://doi.org/10.1007/978-3-319-20762-9_9)
- Chapter **On the Computational Meaning of Axioms**, In O. Pombo, A. Nepomuceno, J. Redmond (Ed.) *Epistemology, Knowledge and the Impact of Interaction* (Springer), with A. Naibo and M. Petrolo, DOI: [10.1007/978-3-319-26506-3_5](https://doi.org/10.1007/978-3-319-26506-3_5)

Workshop **Loop Quasi-Invariant Chunk Motion by peeling with statement composition**, In *Proceedings DICE-FOPARA 2017*, with J.-Y. Moyén and T. Rubiano, DOI: [10.4204/EPTCS.248.9](https://doi.org/10.4204/EPTCS.248.9)

Publications (Others)

Recension **Recension de "The blind spot. Lectures on logic" par J.-Y. Girard (European Mathematical Society, 2011)**, *Gazette des Mathématiciens* 142, pp.136-143, with C. Rétoré, [hal-01076369](https://hal.archives-ouvertes.fr/hal-01076369)

Proceedings **Why Complexity Theorists Should Care About Philosophy**, In Jean Fichot, Thomas Piecha (editors), *Beyond Logic. Proceedings of the Conference held in Cerisy-la-Salle*, pp. 381–393., DOI: [10.15496/publikation-18676](https://doi.org/10.15496/publikation-18676)

Peer Reviewed Communications without formal Proceedings

- 2013 **Logarithmic Space and Permutations**, *DICE 2013*
- 2015 **Measurable Preorders and Complexity**, *TACL 2015*
- 2016 **Interaction Graphs and Quantitative Semantics**, *GaLoP 2016*
- 2018 **A semantic conjecture on second-order MLL and its complexity consequences (work in progress)**, *Linearity-TLLA 2018*, with L.T.D. Nguyễn
- 2018 **Coherent Interaction Graphs: A Non-Deterministic Geometry of Interaction for MLL**, *Linearity-TLLA 2018*, with L.T.D. Nguyễn
- 2018 **Entropy and Complexity Lower Bounds**, *DICE 2018*, with Luc Pellissier
- 2018 **Entropy and Complexity Lower Bounds**, *Linearity-TLLA 2018*, with Luc Pellissier
- 2019 **PRAMs over integers do not compute maxflow efficiently**, *DICE-FOPARA 2019*, with L. Pellissier
- 2019 **Finite semantics of polymorphism, complexity and the power of type fixpoints**, *DICE-FOPARA 2019*, with L.T.D. Nguyễn, P. Pistone and L. Tortora de Falco
- 2023 **Certifying Complexity Analysis**, *CoqPL 2023*, with C. Aubert, N. Rusch, and T. Rubiano
- 2023 **Linear Realisability and cobordisms**, *TLLA 2023*, with V. Maestracci
- 2023 **Linear realisability over nets and second order quantification**, *TLLA 2023*, with A. Ragot and L. Tortora de Falco
- 2023 **Normal functors[ions], [the irrelevance of] power series, and [a new model of] λ -calculus**, *TLLA 2023*, with M. Rogers and W. Troiani
- 2023 **Formalising the notion of algorithm**, *HAPOC 2023*, with A. Naibo

Tools/Software

- Software **A prototype LLVM pass, implementing the loop optimisation described in the series of joint papers with J.-Y. Moyén and T. Rubiano**
https://github.com/ThomasRuby/lqicm_pass
- Software **A proof-of-concept in python for optimising C programs, implementing the loop optimisation described in the series of joint papers with J.-Y. Moyén and T. Rubiano**
https://github.com/ThomasRuby/LQICM_On_C_Toy_Parser
- Software **A Python implementation of MWP flow analysis, Implementation in Python of MWP flow analysis to analyse data complexity of C programs, with C. Aubert, N. Rusch, T. Rubiano**
<https://github.com/seiller/pymwp>

Preprints

- Preprint **Finite semantics of polymorphism, complexity and the power of type fixpoints**, with *L.T.D. Nguyễn, P. Pistone and L. Tortora de Falco*, 2019
<https://hal.archives-ouvertes.fr/hal-01979009>
- Preprint **An Embellished Account of Agafonov's Proof of Agafonov's Theorem**, with *Jakob G. Simonsen*, 2020
<https://hal.archives-ouvertes.fr/hal-02891463>
- Preprint **Agafonov's Theorem for finite and infinite alphabets and probability distributions different from equidistribution**, with *Jakob G. Simonsen*, 2022
<https://hal.archives-ouvertes.fr/hal-02993635>
- Preprint **Zeta functions and the (linear) logic of Markov Processes**, 2022
<https://hal.archives-ouvertes.fr/hal-02458330>
- Preprint **Multiplicative Linear Logic from Logic Programs and Tilings**, with *Boris Eng*, 2021
<https://hal.archives-ouvertes.fr/hal-02895111>
- Preprint **A cartesian $(2, 1)$ -category of homotopy polynomial functors in groupoids**, 2021, with *E. Finster, M. Lucas, S. Mimram*
- Preprint **Unifying lower bounds for algebraic machines, semantically**, with *L. Pellissier and U. Léchine*, 2022
<https://hal.archives-ouvertes.fr/hal-01921942>
- Preprint **Implicit complexity through linear realisability: polynomial time and probabilistic classes**, 2023
<https://hal.archives-ouvertes.fr/hal-02458358>
- In Prep. **Logical Constants from a Computational Point of View**, with *A. Naibo, M. Petrolo*
- In Prep. **A Probabilistic Agafonov's Theorem**, with *J. G. Simonsen*
- In Prep. **Abstraction, Indiscernibility, and Types**, with *W. Troiani and N. Rogers*
- In Prep. **An ontology of computer science**, with *A. Naibo*

Unpublished Documents (Available Online)

- 2007 **La Ludique**, (*First Year*) *Masters Thesis (Philosophy)*
- 2008 **From Proof Nets to the Hyperfinite Factor**, *Masters Thesis (Mathematical Logic and Foundations of Computer Science)*
- 2011 **Topologie Non-Commutative. (Notes on Gelfand's theorem)**, *Lecture Notes*
- 2011 **Théorie des Ensembles (Set Theory)**, *Lecture Notes*
- 2012 **Logique dans le facteur hyperfini: géométrie de l'interaction et complexité**, *PhD thesis*
- 2012 **Description of the Thesis: *Logic in the Hyperfinite Factor: Geometry of Interaction and Complexity***, 20-page english summary of my PhD thesis
- 2014 **Interaction Graphs and Complexity**, *Abstract*
- 2015 **Memoization for Unary Logic Programming: Characterizing Ptime**, *Research report*, Joint work with Marc Bagnol and Clément Aubert, January 2015
- 2015 **Towards a Complexity-through-Realizability theory**
<https://arxiv.org/abs/1502.01257>
- 2016 **From Dynamic to Static Semantics, Quantitatively**
<https://arxiv.org/abs/1604.05047>

- 2016 **Notes on Graph C*-algebras and Dynamical Systems**, *Lecture Notes*
 2018 **Semantics, Entropy and Complexity Lower Bounds**, *with L. Pellissier*

Editorial work

- Editor **Proceedings Third Joint Workshop on Developments in Implicit Computational complexity and Foundational & Practical Aspects of Resource Analysis**, *Electronic Proceedings in Theoretical Computer Science*, DOI: [10.4204/EPTCS.298](https://doi.org/10.4204/EPTCS.298); ISSN: 2075-2180

Organisational Activities

- Organization **Organiser of the EPIT 2023 – CALeidoscope Spring/Summer School on Computational Complexity**, *France*, June 2023
- Organization **Organiser of an international workshop and conference on Geometric Complexity Theory**, *CMI, Chennai, India*, January 17th – 31th, 2022
<https://gct2022.sciencesconf.org>.
- Organization **Organiser of the CALeidoscope 2021 Spring/Summer School on Computational Complexity**, *Paris, France*, 2021
<https://caleidoscope21.sciencesconf.org>.
- Organization **Organiser of the LIPN-LAGA Operad day 2020**, *online*, November 5th 2020
<https://operades20.sciencesconf.org>.
- Organization **Organiser of the CALeidoscope 2020 Spring/Summer School on Computational Complexity**, *Paris, France*, 2020
<https://caleidoscope20.sciencesconf.org>.
- Organization **Organiser of the CALeidoscope 2019 Spring/Summer School on Computational Complexity**, *Paris, France*, 2019
<https://caleidoscope.sciencesconf.org>.
- Organization **Workshop on Proof Nets and Transcendental Syntax**, *GDRI Linear Logic*, Villetaneuse, France, 2018
- Organization **Logic group seminar and working groups**, *LIPN*, Villetaneuse, from 2018, ongoing
- Organization **Seminar on semantics of linear logic**, *IT University*, Copenhagen, 2015-2016
- Organization **Symposium "The meaning of Axioms"**, *14th CLMPS congress*, 2011
 Speakers: Denis Bonnay, Gilles Dowek, Alexandre Miquel, Alberto Naibo, Mattia Petrolo, Samuel Troncon
- Organization **"Séances de Mathématiques" seminar**, *IML, Marseille*, from 2010 to 2011
- Organization **Interdisciplinary Working Group for PhD Students**, *Reunions in Paris and Marseille*, in 2010 and 2011
 Funded by: Paris 1 University, Paris 7 University, Aix-Marseille II University, ENS (Paris)
- Organization **Working Group on Geometry of Interaction**, *Reunions in Paris and Marseille*, from 2008 to the creation of the ANR project LOGOI

Invited Doctoral Courses and Seminars

- Course **Paris 1 University**, *June 2009*, 15 hours course, Paris, France
- Course **Thematic School "Linear Logic, Ludics and Geometry of Interaction"**, *August 27th – September 1st, 2012*, 1h30 course, Paraty, Brazil
- Course **Summer School on Linear Logic and Geometry of Interaction**, *August 27th-31st, 2013*, 1h30 course, Turin, Italy

- Course **Oberseminar "Logik und Sprachtheorie"**, *October 29th, 2013*, 4 hours course, Tübingen, Germany
- Seminar **Semantics of Linear Logic**, *From November 2015 to May 2016*, IT University, Copenhagen, Denmark

Invited Communications in International Events

- Talk **Summer School on Linear Logic and Geometry of Interaction**, *August 31st, 2013*, Turin, Italy
- Talk **Workshop "Higher Order Computation: Types, Complexity, Applications"**, *June 16th, 2014*, Institut Henri Poincaré, Paris, France
- Talk **Workshop "Quantitative Semantics of Logic and Computation"**, *September 2nd, 2016*, Marseille, France
- Talk **Conference of the ANR-DFG project BeyondLogic**, *May 22nd-26th, 2017*, Cerisy, France
- Talk **Linear Logic, Thirty Years Later**, *October 25th, 2017*, Rome, Italy
- Talk **Logical Time and Computational Time**, *November 13th-14th, 2017*, Lyon, France
- Talk **Cologne-Twente workshop on Graphs and Combinatorial Optimization**, *June 18th-20th 2018*, CNAM, Paris, France
- Talk **Joint invited talk for the Structures and Deduction (SD 2019) and Trends in Linear Logic (TLLA 2019) international workshops**, *June 29-30th, 2019*, Dortmund, Germany
- Talk **Logic and Computational Complexity workshop (LCC 2019)**, *July 8th, 2019*, Patras, Greece
- Talk **Shonan Meeting on Higher Order Complexity and Applications**, *October 7-10th, 2019*, Shonan Village, Japan
- Talk **Conference on Geometric Complexity Theory (GCT 2022)**, *January 28th 2022*, CMI, Chennai (online)
- Talk **Logic and transdisciplinarity: Mathematics/Computer Science/Philosophy/Linguistics**, *February 7th-11th, 2022*, CIRM, Marseille, France
- Talk **Séminaire INTERSEM**, *June 2022*, Paris & Online
- Talk **École thématique "Philosophie et Mathématiques Contemporaines" (PhilMath)**, *June 27th - July 1st 2022*, Chateau de Goutelas, France
- Talk **Shonan Meeting on New Directions and Challenges in Interactive Semantics**, *November 7th-10th 2022 (initially October 2020)*, Shonan Village, Japan
- Talk **Realisability Workshop**, *October 2022*, Fontainebleau, France
- Talk **Conference "Logic and Computing: how do they interface?"**, *November 2022*, Lyon, France

Administrative Roles

- 2022 – Member and Member of the Board of the interdisciplinary section CID53 of the National Committee for Scientific Research
- 2021 – Scientific secretary and Member of the board of section 06 of the National Committee for Scientific Research, <https://cn6.fr/>
- 2021 – Head of the "Complexities" transversal axis at LIPN

- 2021 – **European programs correspondent for LIPN (correspondant Europe du laboratoire)**
- 2019 – **Head of the Communication committee at LIPN (correspondant communication du laboratoire)**
- 2018 – **Member of the International Relations committee at LIPN**
- 2020 – 2021 **Member of the Communication committee of the EUR Project Math & Computer Science graduate school**
<https://eur.univ-paris13.fr/fr>
- 2018 – 2019 **Person in charge of Communication and Web for the LoVe team at LIPN. Member of the Communication committee at LIPN**

Other Research Activities

- Visits **Research Visits**, Datalogisk Institut, University of Copenhagen (08/2014, 10/2017, 11/2017, 01/2018, 03/2018, 10/2019, 08/2021), PUC-Rio, Brazil (08/2018), ERATO MMSD, National Institute of Informatics, Japan (10/2019), RIMS, Kyoto University (10/2019), Computer Science department at Aarhus university (08/2021)
- Expert **Member (external expert) of the hiring committee for CNRS junior positions 53/02, 2022**
- Correcteur **Correcteur de l'épreuve d'informatique X/ENS, 2022**
- Evaluator **Expert-Evaluator for the European Union, 2020, 2021**
- Evaluator **Expert for the National Swiss Fund, 2021**
- PC Chair **Chair and Organiser of DICE-FOPARA 2019, ETAPS 2019 affiliated event, Prague, Czech Republic, 2019**
Joint workshop: 10th workshop on Developments in Implicit Computational Complexity, and 6th workshop on Foundational and Practical Aspects of Resource Analysis.
- PC Member **Member of the program/organising committee of the monthly Chocola meetings, from December 2020**
<http://chocola.ens-lyon.fr>.
- PC Member **Member of Program Committees, TLLA (5th international workshop on Trends in Linear Logic and Applications) 2021, LCC (Logic and Computational Complexity) 2020, Linearity-TLLA (joint workshop: 6th international workshop on Linearity and 4th international workshop on Trends in Linear Logic and Applications) 2020, GaLoP (Games for Logic and Programming Languages) 2019, DICE (Developments in Implicit Computational Complexity) 2016**

Selection of Communications (Workshops and Conferences)

- Talk **"Interaction Graphs: Multiplicatives"**, *GaLoP V (Games for Logic and Programming Languages)*, *ETAPS 2010 Workshop*, March 20th-21st, 2010, Paphos, Cyprus
- Talk **"Logical Constants from a Computational Point of View"**, *ANR project LOCI meeting*, January 20th-21st, 2011, CIRM, Marseille, France
- Talk **"Interaction Graphs: Additives"**, *Workshop on Linear Logic (Geometry of Interaction, Traced Monoidal Categories and Implicit Complexity)*, November 7th-11th, 2011, Kyoto, Japan
- Talk **"Interaction Graphs: Additives"**, *Logic and Interaction 2012*, January 30th – March 2nd, 2012, CIRM, Marseille, France
- Talk **"Interaction Graphs: Additives"**, *LICS 2012 (Logic In Computer Science)*, June 25th-28th, 2012, Dubrovnik, Croatia

- Talk **"Interaction Graphs: Additives"**, *GaLoP VII (Games for Logic and Programming languages)*, June 29th, 2012, Dubrovnik, Croatia
- Talk **"Espace Logarithmique et Permutations"**, *GEOCAL Meeting*, February 15th, 2013, Lyon, France
- Talk **"Logarithmic Space and Permutations"**, *DICE 2013 (Developments in Implicit Computational Complexity)*, March 17th, 2013, Rome, Italy
- Talk **"Interaction Graphs and Complexity"**, *GEOCAL Meeting*, March 25th, 2014, Bordeaux, France
- Talk **"Towards a Complexity-through-Realizability Theory"**, *FOPARA–DICE 2015*, April 12th, 2015, London, UK
- Talk **"Measurable Preorders and Complexity"**, *TACL 2015 (Topology, Algebra and Categories in Logic)*, June 26th, 2015, Ischia, Italy
- Talk **"Interaction Graphs and Quantitative Semantics"**, *GALOP 2016 (Games for Logic and Programming Languages)*, *ETAPS 2016 Workshop*, April 2nd, 2016, Eindhoven, Netherlands
- Talk **"Measurable Preorders and Complexity"**, *FOSSACS 2016 (Foundations of Software Science and Computation Structures)*, April 6th, 2016, Eindhoven, Netherlands
- Talk **"Interaction Graphs: Full Linear Logic"**, *LICS 2016 (IEEE/ACM Logic in Computer Science)*, July 6th, 2016, New York, USA
- Talk **"Computational Complexity, between Algebra and Geometry"**, *GEOCAL-LAC Meeting*, November 29th, 2016, Paris, France
- Talk **"Entropy and Complexity Lower Bounds"**, *Developments in Implicit Computational Complexity (DICE) 2018*, April 14th-15th, 2018, Thessaloniki, Greece
- Talk **"Measurable Dynamics, Logic and Computational Complexity"**, *Conference on Mathematical Logic, Satellite event of the ICM 2018*, August 10th-11th, 2018, Niterói, Brazil
- Talk **"PRAMs over integers do not compute maxflow efficiently"**, *Joint international workshop on Developments in Implicit Computational Complexity and Foundations and Practice of Resource Analysis (DICE-FOPARA) 2019*, April 6-7th, 2019, Prague, Czech Republic

Selection of other Invited Communications

- Talk **ANR project LOGOI meeting**, June 14th, 2012, Marseille, France
- Talk **ANR project RECRE meeting**, October 11th, 2012, Lyon, France
- Talk **"PPS Seminar"**, January 24th, 2013, PPS, Paris, France
- Talk **ANR project LOGOI meeting**, February 1st, 2013, Marseille, France
- Talk **"LAMA Seminar"**, April 4th, 2013, LAMA, Chambéry, France
- Talk **ANR project LOGOI meeting**, June 10th-11st, 2013, Paris, France
- Talk **"68nqrt" Seminar**, June 13th, 2013, IRISA/INRIA, Rennes, France
- Talk **GdR IM meeting**, January 28th, 2014, Paris, France
- Talk **Séminaire de Mathématiques**, February 25th, 2014, IHÉS, Bures-sur-Yvette, France
- Talk **"Algorithmics, Complexity and Logic Laboratory" seminar**, March 31st, 2014, LACL, Paris, France
- Talk **ANR project ELICA meeting**, February 6th, 2015, LIPN, Paris, France
- Talk **ANR project LOGOI meeting**, March 24th, 2015, IML, Marseille, France

- Talk **HCC seminar**, *November 27, 2015*, Department of Computer Science (DIKU), University of Copenhagen, Denmark
- Talk **"PPS Seminar"**, *March 10th, 2016*, PPS, Paris, France
- Talk **CHOCOLA Seminar**, *November 9th, 2017*, ENS Lyon, France
- Talk **Workshop on Realisability**, *June 12th-13th 2018*, CIRM, Marseille, France
- Talk **Computer Science Department seminar**, *August 7th, 2018*, PUC-Rio, Rio de Janeiro, Brazil
- Talk **Colloque "Le même et l'autre : identité, orthogonalité, types"**, *November 5-6th 2018*, Lyon, France
- Talk **Séminaire Général de Logique**, *March 18th, 2019*, IMJ-PRG, Paris, France
- Talk **HEPIC seminar (Histoire et Philosophie de l'Informatique et du Calcul)**, *May 15th, 2019*, IHPST, Paris
- Talk **"LAMA Seminar"**, *October 15th, 2020*, LAMA, Chambéry, France
- Talk **Mathematical Foundations seminar**, *April 27th, 2021*, University of Bath, UK
- Talk **TallCat seminar**, *December 9th, 2021*, Tallinn, EE

Teaching Experience

- 2021-2022 **Lectures and Exercice sessions in Computer Science**, *Université Paris 13*, 45 hours
Courses: Logic (first year students in computer science, second semester – approx. 300 students).
- 2020-2021 **Lectures in Mathematics / Computer Science**, *Université Paris 13*, 51 hours
Courses: Category Theory (third year students in mathematics, first semester), Logic (first year students in computer science, second semester – approx. 300 students).
- 2020-2021 **Exercise Sessions in Computer Science**, *Université Paris 13*, 36 hours
Courses: Logic (first year students in a dual degree mathematics and computer science, second semester).
- 2019-2020 **Exercise Sessions in Computer Science**, *Université de Nantes*, 22 hours
Courses: Fundamentals of Computer Science (third year students, computer science diploma, second semester).
- 2018-2019 **Lectures in Mathematics / Computer Science**, *Université Paris 13*, 54 hours
Courses: Category Theory (third year students, dual mathematics and computer science diploma, first semester).
- 2017-2018 **Lectures in Mathematics / Computer Science**, *Université Paris 13*, 48 hours
Courses: Category Theory (third year students, dual mathematics and computer science diploma, first semester).
- 2017-2018 **Exercise Sessions and Practice Sessions in Computer Science (languages: C)**, *Université Paris 13*, 60 hours
Courses: Logic, Algorithmics (first year students, second semester).
- 2012-2013 **Exercise Sessions and Practice Sessions in Computer Science (languages: Python)**, *Université de Savoie*, 40 hours
Courses: Algorithmic and Programming (first year students, second semester).
- 2011-2012 **Exercise Sessions and Practice Sessions in Computer Science (languages: Python, Ada and C)**, *Université de Savoie*, 176 hours
Courses: Introduction to Algorithmic and Programming (first year students, first semester), Algorithmic and Programming (first year students, second semester), Imperative Programming (second year students, first semester), Operating Systems (third year students, first semester).
- 2008-2011 **Lectures in Mathematics (third year students)**, *Université de la Méditerranée*
Courses: Introduction to Logic. (36 hours of teaching each year)

Other Teaching Activities

- 2015 **Participation to the "Fête de la science" in Paris**
This is a national yearly event for the popularisation and promotion of science, organised by the French ministry for higher education and research.
- 2013 **Qualified for holding a *Maitre de Conférence* position both in mathematics and in computer science**, *Delivered by the French ministry of higher education and research*, 13/02/2013, Qualification Number: 13225242836
- 2012-2013 **Co-organization of a "Maths à modeler" course**, *Université de Savoie*
This is an initiation to research course for elementary school pupils (around ten 1h30 sessions).
- 2008-2011 **Participation to five "Hippocampe" courses**, *Université de la Méditerranée*
These are three-days courses initiating high-school and middle-school students to research.

Carrier Breaks

- 21 Weeks Paternity Leave (2 weeks) from May 6th 2016 to May 23rd 2016, and Parental Leave (19 weeks) from October 24th, 2016 to March 5th, 2017.