

# Marie Kerjean

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French, 2 children (09/2014 and 05/2016)

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## Employment

- Oct. 2020 - **CNRS Researcher**, *LIPN, Université Paris 13, Villetaneuse.*
- Nov 2018 - Oct. 2020 **Post-doc Researcher**, *INRIA Bretagne Atlantique, Nantes.*  
Under the supervision of A. Mahboubi
- Sept. 2014 - Oct. 2018 **PhD candidate**, *IRIF Laboratory, Université Paris Diderot.*  
Under the direction of T. Ehrhard
- Sept. 2013- Sept 2014 **Pre-doctoral Internship**, *IRIF Laboratory, Université Paris Diderot, Paris.*  
Under the direction of C. Tasson
- Sept 2010 -Sept 2014 **Civil Servant**, *Ecole Normale Supérieure de Lyon, France.*

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## Grants and Fellowships

- 2019 **L'Oréal-Unesco FWIS**, Computing Analysis through Type Theory, Research grant funding and coaching by the L'Oréal foundation. L'Oréal-Unesco Fellowship for Women in Science (€20,000).
- 2018-2020 **Inria fellowship**, *Inria Bretagne and Région Pays de la Loire*, Design formal libraries about D-finite functions.
- 2014-2017 **PhD fellowship**, *French ministry for Higher Education and Research grant.*

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## Teaching experience

- 2021 **Introduction to formal proofs**, *Université Sorbonne Paris Nord*, Co-organisation of a new course for first year university students, using the Coq Proof assistant.
- 2021 **Exercise sessions in Analysis for Computer science students**, *Université Sorbonne Paris Nord.*
- 2017 **Teaching assistant in Computer Science**, *University Paris 7.*
- 2015 **Teaching assistant in Mathematics**, *University Paris 7.*

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## Organisational and Community Services

### Organisation

- Reading Group **Co-organiser, group on Differentiable Programming**, *Nantes*, 2019.
- Team meeting **Co-organiser, Séminaire Quésaco**, *LS2N, Nantes*, 2020.
- PhD seminar **Co-organiser of the PhD's student seminar**, *IRIF, Paris Diderot*, 2015.

### Supervision

- Oct. 2021 - March 2022 **Co-Supervision of Valentin Maestracci**, *M2 ENS Paris Saclay, Computer Science*, \*-autonomous differential categories.
- March-August 2021 **Co-Supervision of Simon Mirwasser**, *M2 ENS Paris Saclay, Computer Science*, Indexed Differential Linear Logic.
- June-July 2020 **Supervision of Théo Vignon**, *L3 ENS Paris Saclay, Computer Science*, Banach-Steinhaus in Coq.
- June-July 2019 **Supervision of Essaïe Bauer**, *L3 ENS Lyon, Computer Science*, Chiralities and differentiation.

- June 2018 **Supervision of Tu Jie**, *first year student in Mathematics and Computer Science*, Lambda calculus and abstract machines.
- Outreach**
- Outreach **Two Interventions in High-Schools**, *Women in Science*, March 2021.
- Popularisation **Written popularisation**, *Author of popularisation text on formal proofs and semantics for Blog Binaire*, 2020.
- Reviewing**
- Conferences **Sub-reviewer for CSL, ETAPS, LICS.**
- Journals **Reviewer for "Mathematical Structures in Computer Science", Information and Computation, "Cahiers de Topologies", "Logical methods in computer science".**
- Program Committee **PC member of TLLA19, JFLA2020, LAFI2020, MSFP2020, SYCO8, JFLA2021, CALCO 2021, JFLA2022 .**  
 TLLA, LAFI and MSFP are international workshops. JFLA is a national conference. SYCO is an international symposium. CALCO is an international conference

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## Education

- January 2019 **Qualification**, *Qualification aux sections 25, 26 et 27 de la CNU.*
- October 2018 **PhD Diploma in Computer Science**, IRIF, Université Paris Diderot, France.
- 2012 - 2013 **Parisian Master of Research in Computer Science (MPRI)**, Paris Diderot University.
- 2011 - 2012 **Master's degree**, *Master in Advanced Mathematics*, ENS Lyon, France.

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## Academic visits

- November 2019 **Invited researcher**, *McGill University and MILA*, Canada.  
 Invited by Pr. Panangaden
- 2015 - 2016 **Invited researcher**, *IT University of Copenhagen*, Denmark.  
 Invited by R. Mogelberg

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## Selected Communications

### Invited International communications

- International Workshop  **$\partial$  is for Dialectica**, Invited talk to AIPLANS 2021, affiliated with NEURIPS, Online, December 2021.
- International Workshop  **$\partial$  is for Dialectica**, Invited talk to TLLA 2021, affiliated with LICS, Online, June 2021.
- International Workshop  **$\partial$  is for Dialectica**, Invited talk to an invitation BIRS workshop on Tangent categories and applications., Online, June 2021.
- International Workshop **A formalisation of Hahn-Banach theorem in Coq**, Invited talk to an invitation only workshop Big-Proof, Edimbourg, May 2019.
- International Symposium **Differentiating Proofs and Programs**, Invited talk to SYCO3, Oxford, March 2019.
- International Workshop **Higher-Order Differentiation**, Talk to an invitation only workshop, Bellairs, March 2019.
- International Conference **A logical account for partial differential equations**, Invited talk to a plenary session on differential programming, MFPS 2108, Halifax, June 2018.
- Doctoral course **Differential Linear Logic**, *Doctoral course (6h) on the semantics of linear logic*, ITU Copenhagen, February 2016.
- International Workshop **Mackey-complete spaces and power series**, Invited talk to an invitation only workshop QSLC, Marseille, September 2016.

### International conferences and workshops communications

- Workshop  **$\partial$  is for Dialectica**, *TLLA20*, Online, June 2020.
- Workshop **A formalisation of Hahn-Banach theorem in Coq**, *TYPES conference, Oslo, June 2019*, with A. Mahboubi, [preprint available](#).
- Conference **Higher-Order Distributions for Linear Logic**, *FOSSACS2019*, Praha, April 2019.
- Conference **A logical account for LPDEs**, *LICS2018*, Oxford, June 2018.
- Workshop **Smooth models of LL based on Schwartz epsilon product**, *TLLA18*, Oxford, June 2018.
- Workshop **Smooth models of Linear Logic and Linear Partial Differential equations**, *TLLA17*, Oxford, September 2017.
- Workshop **Tensor products and \*-autonomous categories**, *TACL15*, Ischia, 2015.
- Workshop **Weak topologies for LL**, *SD14*, Vienna, July 2014.

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### Formal Proofs

I am part of the Mathematical Components Analysis project, on various branch which are all available on [github](#). This is a formalization of functional analysis in Coq + axioms, over the project Mathematical Components.

# Publication List

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## Peer Reviewed Publications

### International Conferences

- 2020 **Forgetful inference with canonical structures**, *IJCAR 2020*, with Reynald Affeldt, Cyril Cohen, Assia Mahboubi, Damien Rouhling, Kazuhiko Sakaguchi. [preprint](#)
- 2019 **Higher-order Distributions for Linear Logic**, *FoSSacs 2019*, part of *ETAPS*, with J.-S. Lemay. [preprint](#)
- 2018 **A Logical Account for Linear Partial Differential Equations**, *33rd Annual ACM/IEEE Symposium on Logic in Computer Science, LICS 2018*. [preprint](#)

### International Journals

- 2019 **Models of Linear Logic based on Schwartz' epsilon product**, *Published in Theory and Applications of Categories*, with Y. Dabrowski, [available online](#). Extensive 87 pages research article.
- 2018 **Mackey-complete spaces and power series : A topological model of Differential Linear Logic**, *Published in Mathematical structure in computer science*, with C. Tasson. [preprint](#)
- 2016 **Weak topologies for Linear Logic**, *Logical Methods for Computer Science*. [available online](#)

### National conferences

- 2019 **Chiralités et exponentielles: un peu de différentiation**, *Journée Franco-phone des langages applicatifs*, with Ésaïe Bauer (student at ENS Lyon). [preprint](#)

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## Preprints

- 2020 **Chiralities in Topological Vector Spaces**. [preprint](#)

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## Manuscripts

These manuscripts are available online.

- 2018 **Reflexive spaces of smooth functions - towards a logical account of linear partial differential equations**, *PhD thesis*, Under the direction of T. Ehrhard.
- 2013 **Les espaces vectoriels topologiques comme modèles quantitatif de DiLL**, *Internship Report*, Under the direction of C. Tasson, IRIF, University Paris 7.
- 2012 **Convenient Spaces and Real Analytic Maps Between Them**, *Internship Report*, Under the direction of R. Blute, University of Ottawa.
- 2011 **Etude de "Ample Dividing" de D. Evans**, *Internship Report*, Under the direction of F. Wagner, University of Lyon 1.