Meven Lennon-Bertrand

Post-doctoral researcher – Picube team, Inria & IRIF, Université Paris Cité

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Logic | Dependent types | Proof assistants | Typing Algorithms | Formalised mathematics

Positions

Inria Starting Researcher Position

Picube team – Malinca ERC grant

Sep. 2025 – ... | IRIF, Université Paris Cité

Research Associate

PI: Neel Krishnaswami – TypeFoundry ERC grant

Nov. 2022 – Aug. 2025 | University of Cambridge

PhD Student

Supervisor: Nicolas Tabareau

Sep. 2019 – Sep. 2022 | Gallinette team, Université de Nantes

Selected Research Highlights

Journal Articles

- Sozeau, Forster, Lennon-Bertrand et al., *Correct and Complete Type Checking and Certified Erasure for Coq, in Coq* (JACM 2025)
- Lennon-Bertrand, Maillard, Tabareau et al., *Gradualizing the Calculus of Inductive Constructions* (TOPLAS 2022)

Conference Articles

- Adjedj, Lennon-Bertrand, Benjamin et al., *AdapTT: Functoriality for Dependent Type Casts* (POPL 2026)
- Lennon-Bertrand, *What Does It Take to Certify a Conversion Checker?* (FSCD 2025, **Best paper by junior researcher**)
- Laurent, Lennon-Bertrand and Maillard, *Definitional Functoriality for Dependent (Sub)Types* (ESOP 2024, **Distinguished artefact**)
- Adjedj, Lennon-Bertrand, Maillard et al., *Martin-Löf à la Coq* (CPP 2024, **Distinguished paper**)

Formalisations

MetaRocq | LogRel-Rocq | Coq-PartialFun | AutoSubst 2

Invited Talks

Workshop on the Implementation of Type Systems

17 Jan. 2026 | Rennes

Meeting of the EuroProofNet Working Group 6

5 Apr. 2024 | KU Leuven

Big Specification Workshop

17 Oct. 2024 | Newton Institute, Cambridge

Teaching and Outreach

Lecturer: Proof Assistants

2024 | University of Cambridge

Lecturer: Denotational Semantics

2023, 2024 | University of Cambridge

Science Popularisation: CHantiers Arts, Sciences et Technologies

2019 – 2022 | Lycée Michelet, Nantes

Teaching Assistant: Maths & CS

2019 – 2022 | Université de Nantes

Qualification

Qualification maître de conférence

N° 23227388576

Fev. 2023

Master 2 (Computer Science)

2018 – 2019 | ENS de Lyon

Master 2 (Mathematics)

Preparation to the Agrégation, received 10th

2017 – 2018 | ENS de Lyon

Master 1 (Mathematical Foundations of Computer Science)

2016 – 2017 | Nijmegen, Erasmus exchange

Bachelors (Computer Science & Mathematics)

Double Bachelor

2015 – 2016 | ENS de Lyon

Research Output

Publication

I typically use the first author position to highlight one or two key authors. To distinguish when this is the case (even when authors seem to be alphabetically sorted), I use an asterisk in the list below.

I support the Theoretical Computer Scientists for Future initiative, thus the possibility to avoid plane travel is an important criterion when choosing a venue to publish in. I also favour publishing in open access venues.

Journal

Soz+25 — 2025
Correct and Complete Type Checking and Certified Erasure for Coq, in Coq
Matthieu Sozeau*, Yannick Forster, Meven Lennon-Bertrand, Jakob Nielsen, Nicolas Tabareau and Théo Winterhalter. *Journal of the ACM*. DOI: 10.1145/3706056.

Len+22 — 2022
Gradualizing the Calculus of Inductive Constructions
Meven Lennon-Bertrand*, Kenji Maillard*, Nicolas Tabareau and Éric Tanter. *ACM Transactions on Programming Languages and Systems*. DOI: 10.1145/3495528.

Conference post-proceedings

LS26 — 2026
Bidirectional Interpolation for the λ-Calculus – Revisiting and Formalising Craig-Čubrić Interpolation
Meven Lennon-Bertrand and Alexis Saurin. *17th International Conference on Interactive Theorem Proving* (to appear).

Adj+26 — 2026
AdapTT: Functoriality for Dependent Type Casts
Arthur Adjedj*, Meven Lennon-Bertrand*, Thibaut Benjamin and Kenji Maillard. *Proceedings of the ACM on Programming Languages*. DOI: 10.1145/3776664.

SLK25 — 2025
Implementing a Type Theory with Observational Equality, Using Normalisation by Evaluation
Matthew Sirman*, Meven Lennon-Bertrand and Neel Krishnaswami. *Post-Proceedings of the 30th International Conference on Types for Proofs and Programs*. DOI: 10.4230/LIPICS.TYPES.2024.5.

Len25 — 2025
What Does It Take to Certify a Conversion Checker?
Meven Lennon-Bertrand. *10th International Conference on Formal Structures for Computation and Deduction*. **Best paper by junior researcher**. DOI: 10.4230/LIPIcs.FSCD.2025.27.

LLM24 — 2024
Definitional Functoriality for Dependent (Sub)Types
Théo Laurent*, Meven Lennon-Bertrand and Kenji Maillard. *33rd European Symposium on Programming*. **Distinguished artefact**. DOI: 10.1007/978-3-031-57262-3_13.

Adj+24 — 2024
Martin-Löf *à la* Coq
Arthur Adjedj, Meven Lennon-Bertrand, Kenji Maillard, Pierre-Marie Pédrot and Loïc Pujet. *Proceedings of the 13th ACM SIGPLAN International Conference on Certified Programs and Proofs*. **Distinguished paper**. DOI: 10.1145/3636501.3636951.

Mai+22 — 2022
A Reasonably Gradual Type Theory
Kenji Maillard*, Meven Lennon-Bertrand, Nicolas Tabareau and Éric Tanter. *International Conference on Functional Programming*. DOI: 10.1145/3547655.

Len21 — 2021
Complete Bidirectional Typing for the Calculus of Inductive Constructions
Meven Lennon-Bertrand. *12th International Conference on Interactive Theorem Proving*. DOI: 10.4230/LIPIcs.ITP.2021.24.

Thesis

Len22 Bidirectional Typing for the Calculus of Inductive Constructions
2022 Meven Lennon-Bertrand.

Peer-reviewed workshops

Len26 Verifying Dependent Type-Checkers
2026 Meven Lennon-Bertrand. **Invited talk**. URL: https://popl26.sigplan.org/home/wits-2026.

Adj+25 AdapTT: A Type Theory with Functorial Types
2025 Arthur Adjedj*, Meven Lennon-Bertrand*, Thibaut Benjamin and Kenji Maillard. URL: https://msp.cis.strath.ac.uk/types2025/.

Len24 Towards a certified proof assistant kernel
2024 Meven Lennon-Bertrand. **Invited talk**. URL: https://europroofnet.github.io/wg6-leuven/.

SLK24 Implementing Observational Equality Using Normalisation by Evaluation
2024 Matthew Sirman*, Meven Lennon-Bertrand and Neel Krishnaswami. URL: https://types2024.itu.dk/Index.html.

LK23 Decidable Type-Checking for Bidirectional Martin-Löf Type Theory
2023 Meven Lennon-Bertrand* and Neel Krishnaswami. URL: https://types2023.webs.upv.es/.

Mai+23 Engineering logical relations for MLTT in Coq
2023 Kenji Maillard, Arthur Adjedj, Meven Lennon-Bertrand and Loïc Pujet. URL: https://types2023.webs.upv.es/.

Len22a Equivalence between Typed and Untyped Algorithmic Conversions
2022 Meven Lennon-Bertrand. URL: https://types22.inria.fr/programme/.

Len22b À bas l'η – Coq's troublesome η-conversion
2022 Meven Lennon-Bertrand. URL: https://popl22.sigplan.org/home/wits-2022#event-overview.

SLF22 The Curious Case of Case: Correct & Efficient Representation of Case Analysis in Coq and MetaCoq
2022 Matthieu Sozeau, Meven Lennon-Bertrand and Yannick Forster.

Publication in open archives

BR18 Coalgebraic Determinization of Alternating Automata
2018 Meven Bertrand and Jurriaan Rot. DOI: 10.48550/ARXIV.1804.02546.

Software Development: Formalisation Projects

Contributions are described using Inria's criteria for software evaluation. All my software is open access.

MetaRocq

Family = research; Audience = community; Evolution = lts; Duration ≥ 5; Contribution = devel, softcont

2020–... The MetaRocq team

Large collaborative project aiming at formalizing Rocq in Rocq itself, and to allow manipulating Rocq terms in Rocq in order to develop certified meta-programming tools.

LogRel-Rocq

Family = research; Audience = partners; Evolution = lts; Duration ≥ 3; Contribution = leader, devel, softcont

2022–... A. Adjedj, K. Maillard, P.-M. Pédrot, L. Pujet

Formalisation of a proof of normalisation by logical relations and verification of a type checker, for a dependent type theory.

AutoSubst 2

Family = utility; Audience = partners; Evolution = basic; Duration ≥ 3; Contribution = softcont

2023–... Adrian Dapprich, Yannick Forster, Kathrin Stark

Code generator dedicated to syntax with binders.

Coq-PartialFun

Family = utility; Audience = partners; Evolution = basic; Duration ≥ 3; Contribution = softcont

2023-... Théo Winterhalter, Kenji Maillard

Support library for the definition of non-structurally recursive functions.

Article artefacts

2022–...

Many conferences in the programming language community organise *Artefact evaluation committee*, which evaluate artefacts (software, formalisations, etc.) independently of program committees. Most of my papers have had their accompanying code reviewed by such artefact evaluation committees, and have systematically been awarded the best available level of evaluation.

- Artefact for 'Definitional Functoriality for Dependent (Sub)Types' [LLM24]:
  Family = research; Audience = partners; evolution = nofuture; Duration = 1; contribution = leader; Url = https://zenodo.org/records/10508084
- Artefact for 'Martin-Löf *à la* Coq' [Adj+24]:
  Family = research; Audience = partners; evolution = nofuture; Duration = 1; contribution = leader; Url = https://zenodo.org/records/8367154
- Artefact for 'A Reasonably Gradual Type Theory' [Mai+22]:
  Family = research; Audience = partners; evolution = nofuture; Duration = 1; contribution = devel; Url = https://zenodo.org/records/6928465
- Artefact for 'Gradualizing the Calculus of Inductive Constructions' [Len+22]:
  Family = research; Audience = partners; evolution = nofuture; Duration = 1; contribution = devel; Url = https://github.com/pleiad/GradualizingCIC

Research Activity

Supervised students

Simon Corbard – Meta-theory of a Type Theory with Adapters

M2 Internship

Mar. 2026 – Jul. 2026 Co-supervised with Thibaut Benjamin

Adrien Mathieu – Domain Models of Dependent Type Theory

ENS Paris long research internship

Oct. 2025 – Jul. 2026 Co-supervised with Paul-André Melliès

Ilya Kaysin – Complete Unification for Dependent Type Inference

PhD Student

Oct. 2024 – ... | Main supervisor: Neel Krishnaswami

Arthur Adjedj – Subtyping in Dependent Type Theory

ENS Paris-Saclay long research internship

Oct. 2024 – Aug. 2025

Robin Jourde – Understanding the η Law for Functions in CIC

Master 2 internship

Jan. – Jul. 2023 | Co-supervised with Nicolas Tabareau

Matthew Sirman – Normalisation by Evaluation for Observational Equality

Undergraduate final dissertation (4^{th} year)

Nov. 2022 – May 2023 | Co-supervised with Neel Krishnaswami

Matthew was distinguished as the best student in his year, in part for his dissertation.

Invited Talks

Formal proof and synthetic mathematics workshop

24 – 26 Jun. 2026 | Heidelberg University

Formal structures to represent proofs and programs

Joint King's College London and Université Paris Cité workshop

20 Feb. 2026 | Université Paris Cité

Workshop on the Implementation of Type Theory

17 Jan. 2026 | Rennes

Formalisation of Mathematics with Interactive Theorem Provers

Nov. 7 2024 | Faculty of Mathematics, Cambridge

Big Specification Workshop

17 Oct. 2024 | Newton Institute, Cambridge

EuroProofNet Working Group 6 Meeting – Invited Talk

4 – 5 Apr. 2024 | KU Leuven

Research Visits

Thierry Coquand & Logic and Types group

27 Apr. – 8 May 2026 | Chalmers University of Technology

Kathrin Stark & Dependable Systems Group

4 – 8 Mar. 2024 | Heriot-Watt University

Conor McBride & Mathematically Structured Programming Group

26 – 30 Jun. 2023 — University of Strathclyde

Andrej Bauer & Faculty of Mathematics and Physics Foundations Seminar

9 – 13 May 2022 — University of Ljubljana

Invited Seminars

Antique Team Seminar

30 Jan. 2026 — ENS Paris

LIFO Lab Seminar

17 Nov. 2025 — Université d'Orléans

CASH Team Seminar

17 Oct. 2025 — ENS de Lyon

Épicure Team Seminar

18 Dec. 2024 — Irisa, Université de Rennes

ReCiProg ANR Workshop Day

04 Jun. 2024 — Université de Nantes

OASIS Seminar

10 May 2024 — University of Oxford

Deducteam Seminar

14 Dec. 2023 — Université Paris-Saclay

Proofs and Algorithms Seminar

12 Dec. 2023 — LIX, École Polytechnique

PPS Seminar & Formath Seminar

7 & 11 Dec. 2023 — IRIF, Université Paris Cité

CHoCoLa Seminar

Jan. 2023 — ENS de Lyon

LoVE Team Seminar

Dec. 2022 — Université Sorbonne Paris Nord

Reviewing & Conference Organisation

Types Steering Committee

2025 – 2028

In charge of the long-term organisation and supervision of the Types conference. I was elected a member during the general assembly of the 2025 edition, and will serve for 3 years.

Program Committee

RocqShop 2026 | JFLA 2026 | ITP 2025 | Types 2024

Artefact Evaluation Committee

ICFP 2022

Subreviewer

FSCD 2026 | CPP 2026 | POPL 2026 | LICS 2025 | FSCD 2025 | CPP 2025 | CSL 2025

Academic and Community Service

Post-doc Representative – Lab Council

2026 – ... | IRIF, Paris

Formath Seminar (organiser)

2026 – ... | IRIF, Paris

Seminar of the Picube team.

SANDWICH Seminar (organiser)

2024 – 2025 | University of Cambridge

Internal seminar of the CLASH group.

Proof Assistants Stack Exchange

2022 – ...

This website aims to answer questions around proof assistants in a community-based manner. I am in the top 5 most reputable users, and a moderator.

Elected Student Representative

2017 – 2018 | ENS de Lyon

Teaching and Science Outreach

Co-Lecturer: Proof Assistants

Fall 2024 | University of Cambridge

With Thomas Bauereiss, for 4th year students. I was in charge of the Rocq half of the course.

Lecturer: Denotational Semantics

Fall 2023, Fall 2024 | University of Cambridge

For two years in a row, I lectured the Denotational Semantics course for 3rd year students.

Teaching Assistant (64 hrs/year)

Sep. 2019 – Jun. 2022 | Université de Nantes

During my PhD, I also worked as a teaching assistant. I taught various levels (1st to 3rd Bachelor years), themes (mathematics, applied and fundamental computer science), formats (lectures, exercise and computer sessions), and publics (specialists and non-specialists).

CHantiers Arts, Sciences et Technologies

2019 – 2022 Théâtre Athénor & Lycée Professionnel Michelet, Nantes

Together with mathematician Bertrand Michel and writers Rémi Checchetto and Sylvain Renard, we collaborated with a vocational high-school teachers to build workshops for their students. I implemented activities directly inspired by the *Computer Science Unplugged* project, and designed some of my own. This culminated in an exhibition, created by the students.

Séminaire de la Détente Mathématique

2018 – 2019 Maison des Mathématiques et de l'Informatique, Lyon

A weekly seminar, aimed at being "relaxed" and accessible to both students and faculty, with talks often on unusual or fun topics. Many students would give their first seminar talk there. I organised the seminar with a team of students, and spoke there.

Co-Lecturer: Category Theory

Sept 2018 – Jan 2019 ENS de Lyon

During my Master 2, I co-lectured a category theory course for ENS de Lyon students.

Thesis

Defended at Université de Nantes, on June 24, 2022. Prepared in the Inria team Gallinette, affiliated to the Laboratoire des Sciences du Numérique de Nantes.

PhD Advisor	Nicolas Tabareau	Directeur de Recherche, Inria Rennes Bretagne Atlantique
Head of the jury	Christine Paulin-Mohring	Professeure des Universités, Université Paris Sud
Rapporteurs	Neel Krishnaswami	Associate Professor, University of Cambridge
	Conor McBride	Reader, University of Strathclyde
Examiners	Jesper Cockx	Assistant Professor, TU Delft
	Herman Geuvers	Professor, Radboud University Nijmegen
	Hugo Herbelin	Directeur de Recherche, Inria Paris
	Assia Mahboubi	Directrice de Recherche, Inria Rennes Bretagne Atlantique
Invited Member	Matthieu Sozeau	Chargé de Recherche, Inria Rennes Bretagne Atlantique