

# Meven LENNON-BERTRAND

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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

- Adedj, 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)
- Adedj, 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 10<sup>th</sup>

📅 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

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### 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 [Correct and Complete Type Checking and Certified Erasure for Coq, in Coq](#)  
2025 Matthieu Sozeau\*, Yannick Forster, Meven Lennon-Bertrand, Jakob Nielsen, Nicolas Tabareau and Théo Winterhalter. *Journal of the ACM*. doi: 10.1145/3706056.

Len+22 [Gradualizing the Calculus of Inductive Constructions](#)  
2022 Meven Lennon-Bertrand\*, Kenji Maillard\*, Nicolas Tabareau and Éric Tanter. *ACM Transactions on Programming Languages and Systems*. doi: 10.1145/3495528.

### Conference post-proceedings

Adj+26 [AdapTT: Functoriality for Dependent Type Casts](#)  
2026 Arthur Adjejd\*, Meven Lennon-Bertrand\*, Thibaut Benjamin and Kenji Maillard. *Proceedings of the ACM on Programming Languages*. doi: 10.1145/3776664.

SLK25 [Implementing a Type Theory with Observational Equality, Using Normalisation by Evaluation](#)  
2025 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 [What Does It Take to Certify a Conversion Checker?](#)  
2025 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 [Definitional Functoriality for Dependent \(Sub\)Types](#)  
2024 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 [Martin-Löf à la Coq](#)  
2024 Arthur Adjejd, 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 [A Reasonably Gradual Type Theory](#)  
2022 Kenji Maillard\*, Meven Lennon-Bertrand, Nicolas Tabareau and Éric Tanter. *International Conference on Functional Programming*. doi: 10.1145/3547655.

Len21 [Complete Bidirectional Typing for the Calculus of Inductive Constructions](#)  
2021 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 Adjeij\*, 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 Adjeij, 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 Meta-Coq](#)  
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  $\geq 5$ ; 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  $\geq 3$ ; Contribution = leader, devel, softcont

 2022–...

 A. Adjeij, 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  $\geq 3$ ; 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  $\geq 3$ ; 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 *Artifact 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 Functionality 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

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### 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 Adjej – Subtyping in Dependent Type Theory

ENS Paris-Saclay long research internship

📅 Oct. 2024 – Aug. 2025

### Robin Jourde – Understanding the $\eta$ 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<sup>th</sup> 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.

## Research Visits

### 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

### Formalisation of Mathematics with Interactive Theorem Provers

📅 Nov. 7 2024

📍 Faculty of Mathematics, Cambridge

### 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

JFLA 2026   ITP 2025   Types 2024

### Artefact Evaluation Committee

ICFP 2022

### Subreviewer

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

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## Co-Lecturer: Proof Assistants

📅 Fall 2024

📍 University of Cambridge

With Thomas Bauereiss, for 4<sup>th</sup> 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 3<sup>rd</sup> 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 (1<sup>st</sup> to 3<sup>rd</sup> 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

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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 Conor McBRIDE	Associate Professor, University of Cambridge Reader, University of Strathclyde
Examiners	Jesper COCKX Herman GEUVERS Hugo HERBELIN Assia MAHBOUBI	Assistant Professor, TU Delft Professor, Radboud University Nijmegen Directeur de Recherche, Inria Paris Directrice de Recherche, Inria Rennes Bretagne Atlantique
Invited Member	Matthieu SOZEAU	Chargé de Recherche, Inria Rennes Bretagne Atlantique