Thomas Traversié

PhD student in Computer Science

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Research interests

- Proof theory
- Type theory
- Logical frameworks
- Proof translations

Education

Since 2023 **PhD student in Computer Science**, *Université Paris-Saclay*, Gif-sur-Yvette
MICS and LMF laboratories
Supervised by Marc Aiguier, Gilles Dowek and Olivier Hermant
Topic: Translation of proofs between higher-order logics and between theories with rewriting

2020–2023 **Engineering degree**, *CentraleSupélec*, Gif-sur-Yvette
Major in Computer Science – Software Sciences
Research Track

Febr.–July 2022 **Academic semester**, *École Polytechnique Fédérale de Lausanne*, Switzerland
International exchange in the Master's program in Computer Science

2018–2020 **Classe préparatoire MPSI/MP***, *Lycée Montaigne*, Bordeaux
Intensive preparatory training in Mathematics and Physics, option in Computer Science

2018 **Scientific Baccalauréat**, *Lycée Palissy*, Agen

Experience

2023–2026 **Teaching activities**, *CentraleSupélec*
I have taught 196 hours at the CentraleSupélec engineering school at the bachelor and master levels. I gave lectures, exercise sessions, lab sessions and project sessions. I participated in both basic computer science courses (algorithmics, programming, information systems) and specialized courses (logic, automata, formal languages, theoretical computer science).

April–Sept. 2023 **Research internship**, *Inria Saclay and LMF*
Deducteam team, supervised by Valentin Blot and Gilles Dowek, collaboration with Théo Winterhalter
Topic: Replacing rewrite rules by axioms in the $\lambda\Pi$-calculus modulo rewriting
Master thesis: Rewrite Rules in the $\lambda\Pi$-Calculus Modulo Theory

2020–2023 **Research track**, *Inria Saclay and LMF*
Deducteam team, supervised by Valentin Blot and Gilles Dowek
The Research Track of CentraleSupélec allows students interested by research to carry out a research project in a laboratory, half a day per week
Topic: Implementing set theory with pointed graphs in the Dedukti proof system

List of publications

Peer-reviewed international conferences

FSCD'25 **Monad Translations for Higher-Order Logic**, *Thomas Traversié*, 10th International Conference on Formal Structures for Computation and Deduction
[PDF]

FoSSaCS'24 **From Rewrite Rules to Axioms in the $\lambda\Pi$-Calculus Modulo Theory**, *Valentin Blot, Gilles Dowek, Thomas Traversié and Théo Winterhalter*, International Conference on Foundations of Software Science and Computation Structures
[PDF]

Peer-reviwed international workshops

LFMTP'24 **Kuroda's Translation for the $\lambda\Pi$-Calculus Modulo Theory and Dedukti**, *Thomas Traversié*, International Workshop on Logical Frameworks and Meta-Languages: Theory and Practice
[PDF]

LFMTP'24 **Proofs for Free in the $\lambda\Pi$-Calculus Modulo Theory**, *Thomas Traversié*, International Workshop on Logical Frameworks and Meta-Languages: Theory and Practice
[PDF]

LFMTP'22 **An Implementation of Set Theory with Pointed Graphs in Dedukti**, *Valentin Blot, Gilles Dowek and Thomas Traversié*, International Workshop on Logical Frameworks and Meta-Languages: Theory and Practice
[PDF]

Submitted papers

2026 **Investigations on Higher-Order Infinitary Logic**, *Thomas Traversié, Olivier Hermant and Marc Aiguier*

2025 **Formalizing Representation Theorems for a Logical Framework with Rewriting**, *Thomas Traversié and Florian Rabe*
[PDF]

2024 **Kuroda's Translation for Higher-Order Logic**, *Thomas Traversié*
[PDF]

Software development and implementation

TranslationTemplates, allowing the translation of proofs between Dedukti theories, using three translation templates, written in OCaml

Construkti, allowing the translation of Dedukti proofs from classical logic to intuitionistic logic, written in OCaml

Library of proofs in Lambdapi, encoding set theory using pointed graphs

Talks

January 2026 Morphisms between Dedukti Theories, ICSPA project meeting

October 2025 Monad Translations for Higher-Order Logic, Journées GT Scalp 2025

July 2025	Monad Translations for Higher-Order Logic, FSCD 2025
Febr. 2025	Translation Templates between Dedukti Theories, KWARC seminar
Sept. 2024	Generic Translations between Dedukti Theories, WG1+2+4 meeting (EuroProofNet)
July 2024	Proofs for Free in the $\lambda\Pi$-Calculus Modulo Theory, LFMTP 2024
July 2024	Kuroda's Translation for the $\lambda\Pi$-Calculus Modulo Theory and Dedukti, LFMTP 2024
June 2024	Kuroda's Translation for Higher-Order Logic, Logimics meeting
June 2024	Kuroda's Translation for Higher-Order Logic, LMF summer seminar
May 2024	Replacing Rewrite Rules by Equational Axioms in the $\lambda\Pi$-Calculus Modulo Theory, LMF PhD seminar
April 2024	From Rewrite Rules to Axioms in the $\lambda\Pi$-Calculus Modulo Theory, FoSSaCS 2024
Dec. 2023	Règles de Réécriture dans le $\lambda\Pi$-Calcul Modulo Théorie, Master thesis defence
August 2022	An Implementation of Set Theory with Pointed Graphs in Dedukti, LFMTP 2022

Participation to events

Research visit

February 2025	One-week visit hosted by Florian Rabe, FAU Erlangen-Nürnberg (Germany) 1500€ Short-Term Scientific Mission grant from EuroProofNet

Conferences and workshops

July 2025	FSCD 2025, Birmingham (United Kingdom)
July 2024	LFMTP 2024 et IWC 2024, Tallinn (Estonia)
April 2024	ETAPS 2024, including ETAPS Mentoring workshop, Luxembourg (Luxembourg)
August 2022	FLoC 2022, Haifa (Israel)

EuroProofNet working groups

I am involved in the EuroProofNet research network, that focuses on the interoperability and usability of proof systems:

Febr. 2025	WG1 meeting, Nogent-sur-Seine (France)
Sept. 2024	WG1+2+4 meeting, Fontainebleau (France)
January 2024	Meeting on Dedukti and proof systems interoperability, Gruissan (France)
Sept. 2023	WG1+4 meeting, Fontainebleau (France)
January 2023	Dedukti tools developers meeting 2, Fréjus (France)

Summer schools

Sept. 2025	International School on Logical Frameworks and Proof Systems Interoperability (LFPSI), Orsay (France)
August 2024	International School on Rewriting 2024 (ISR), Obergurgl (Austria)

Administrative and collective responsabilities

Since 2024 **Representative of PhD students**, *Interfaces Doctoral School*, Université Paris-Saclay

Sept. 2025 **Organizational support**, *EuroProofNet Symposium*, Orsay

Skills

- **Languages:** French (native), English (advanced), Spanish (intermediary)
- **Programming languages:** OCaml, Python, C/C++, Java, Scala, LaTeX, Git, SQL, HTML
- **Proof tools:** Rocq, Isabelle, Méthode B, Frama-C