

Arthur Adjedj

FORMATION

ENS Paris-Saclay — Diplôme de l'ENS, Master Parisien de Recherche en Informatique (MPRI)

September 2021 - August 2026

Research-oriented Computer Science degree. Focus on the relationships between logic and computations.

ISAE-SUPAERO — *Gap year*

September 2023 - August 2024

Master of Science in Aeronautical and Aerospace engineering.

Lycée Thiers, MPSI-MP* — *CPGE*

September 2019 - June 2021

Preparatory Classes for Grandes Écoles.

EXPERIENCE

University of Cambridge, Department of Computer Science and Technology — *Research placement*

September 2024 - August 2025

Study of the interactions between dependent subtyping and inductive families of types.

Airbus Helicopters — *Internship*

March 2024 - August 2024

Software Engineering

TU Delft Programming Languages Group — *M1 Research Internship*

February 2023 - July 2023

Implementation of an arithmetic solver for the unification of cumulative universe constraints in Agda.

SKILLS

Programming: Efficiency in Python, Java, C, C++, Scala, OCaml, Rust, Haskell, Lean, Agda, Coq

Interests in : Programming, Logic, Algorithms, Dependent Type Theory, Software Engineering, Verification, Programming Languages

Open Source contributions to the Lean 4 Programming Language and Theorem Prover

LANGUAGES

French: Mother tongue

English: Cambridge C2 Certification, TOEFL iBT 114/120pts

Spanish: B2 Level

Team Gallinette, Inria Rennes— *L3 Research Internship*

June 2022 - August 2022

Formalisation of a Type Theory inside a Type Theory, using the Coq proof-assistant.

Fleetenergies — *Data Science Internship*

October 2020 - January 2021

Extraction and analysis of fuel consumption-related data to study the efficiency of vehicle fleets.

PUBLICATIONS

AdapTT: A Type Theory with Functorial Types— Arthur Adjedj, Meven Lennon-Bertrand, Kenji Maillard, Thibaut Benjamin

2025

Pre-Proceedings. Published for the Types 2025 Conference.

<https://msp.cis.strath.ac.uk/types2025/TYPES2025-book-of-abstracts.pdf>

Many type theoretic features, from subtyping to observational equality and cast calculi in gradual typing, center around the ability to cast values from one type to another. These casts all act in a conspicuously similar fashion, which actually corresponds to the fact that type formers in dependent type theory are functorial. We propose and extensively study a type theory, AdapTT, which makes systematic and precise this idea of functorial type formers

Martin-Löf à la Coq—Arthur Adjedj, Meven Lennon-Bertrand, Kenji Maillard, Pierre-Marie Pédro, Loïc Pujet- *Distinguished Paper Award*

2024

CPP 2024: Proceedings of the 13th ACM SIGPLAN International Conference on Certified Programs and Proofs.

[arXiv:2310.06376](https://arxiv.org/abs/2310.06376)

We present an extensive mechanization of the metatheory of Martin-Löf Type Theory (MLTT) in the Coq proof assistant.

Engineering logical relations for MLTT in Coq— Arthur Adjedj, Meven Lennon-Bertrand, Kenji Maillard, Loïc Pujet

2023

Pre-Proceedings. Published for the Types 2023 Conference. <https://types2023.webs.upv.es/TYPES2023.pdf>

We report on a mechanization in the Coq proof assistant of the decidability of conversion and type-checking for Martin-Löf Type Theory (MLTT), extending a previous Agda formalization.

PROJECTS

Proost — Proof assistant

2023

Production project, creation of a proof-assistant based on a novel type theory called the Observational Calculus of Constructions (CCobs+).

Grade : 20/20

Chessa.ml — Algorithmic study of groups

2022

Creation of a framework for efficient computations over finite groups. In particular. This system was tailored to study the generating sets of groups, with the intent of studying a yet-to-be-solved mathematical conjecture.

LK — SAT-Solver

2021

Implementation of a first-order-logic solver based on LK Sequent Calculus. Theoretical and practical study of the implementation, as well as its potential extensions.

Grade : 20/20