Rémi **Morvan**

PH.D. STUDENT IN COMPUTER SCIENCE

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Education

LaBRI, Université de Bordeaux   *since Sep. 2021*
PH.D. IN COMPUTER SCIENCE   *Bordeaux, France*

Under the supervision of Diego Figueira & Nathanaël Fijalkow, in LaBRI's Formal Methods and Models department. ENS Ph.D. scholarship (Sep. 2021 – Aug. 2024) & Engineer on the PEPR SAIF project (Sep. 2024 – Aug. 2025).

École normale supérieure Paris-Saclay   *Sep. 2017 - Aug. 2021*
NORMALIEN CIVIL-SERVANT   *Cachan, France*
- Parisian Master of Research in Computer Science *(Univ Paris-Cité)*
- *Agrégation* of Mathematics & Master of Higher Education in Mathematics *(Univ. Paris-Saclay)*

Lycée Saint-Louis   *Sep. 2015 - Aug. 2017*
UNDERGRADUATE STUDIES « *prépa* »   *Paris, France*
Majors in Mathematics and Physics.

Research Experience

RESEARCH INTERNSHIPS & LONG VISITS

Uniwersytet Warszawski   *Feb. & May 2023*
RESEARCH VISIT   *Warsaw, Poland*
Four-week visit (two weeks in Feb. & two weeks in May), hosted by Nathanaël Fijalkow.

Pontificia Universidad Católica de Chile   *Oct. 2022*
RESEARCH VISIT   *Santiago, Chile*
One-month visit, hosted by Pablo Barceló and Miguel Romero (Universidad Adolfo Ibáñez).

IRIF, Université de Paris   *Mar. – Aug. 2021*
MASTER 2 INTERNSHIP   *Paris, France*
Five-month internship, supervised by Thomas Colcombet and Sam van Gool, on *First-order separation over countable ordinals*.

University of Warwick   *Mar. – Aug. 2019*
MASTER 1 INTERNSHIP   *Coventry, United Kingdom*
Five-month internship, supervised by Marcin Jurdziński, on *Recursive algorithms for parity games*.

CRIStAL, Université de Lille   *June – July 2018*
BACHELOR INTERNSHIP   *Lille, France*
Six-week internship, supervised by Philippe Mathieu, on *Multi-agent systems in microeconomics*.

ATTENDED EVENTS (SPECIALIZED WORKSHOPS)

The Futures of Reactive Synthesis, Dagstuhl seminar   *Sep. 2023*
Discrete Mathematics and Logic, CIRM research school   *Jan. 2023*
Finite and Algorithmic Model Theory, Dagstuhl seminar   *Feb. 2022*

Teaching & Supervision

SUPERVISION

Antoine Cuvelier   *June – July 2024*
BACHELOR 3 INTERN (ENS ULM)   *Bordeaux, France*
Bachelor thesis and six-week internship, on homomorphism problems on automatic structures.

Arthur Gall   *May – July 2023*
MASTER 1 INTERN (ENS LYON)   *Warsaw, Poland*
Three-month internship, co-supervised (remotely) with Nathanaël Fijalkow, on probabilistic automata.

Courses

Bordeaux INP Enseirb-Matmeca
Sep. 2023 – Aug. 2024
TEACHING ASSISTANT
Bordeaux, France
- Database Management Systems — Master 1, 20h
- Internship defences — Bachelor 3, 2h

Université de Bordeaux
Sep. 2021 – Aug. 2024
TEACHING ASSISTANT
Bordeaux, France
- Machine Learning & Deep Learning — Master 1 (AI track), 2023–24.
  9h lecture + 9h exercise session + creation of Jupyter notebooks. New course.
- Programming Project (in C) — Bachelor 2, 2022–23, 32h
- Automata Theory — Bachelor 3, 2022–23, 32h
- Computability and Complexity — Master 1, 2021–22, 28h
- Proofs & Logics — Bachelor 3, 2021–22, 24h
- Digital Literacy — Bachelor 1, 2021–22, 13h

Lycée Saint-Louis
Sep. 2020 – July 2021
ORAL EXAMINATIONS IN MATHEMATICS
Paris, France
Total: 59h. For first year *prépa* ($\sim$ bachelor) students.

Service

ASSOCIATIVE & ELECTORAL ENGAGEMENT

LaBRI's scientific council
since Dec. 2023
MEMBER
LaBRI

AFoDIB
since Dec. 2021
PRESIDENT (DEC. 2022 – NOV. 2023)
SECRETARY (DEC. 2021 – NOV. 2022)
Bordeaux, France
MEMBER OF THE BOARD (SINCE DEC. 2023)
Association for Ph.D. students in Computer Science from Bordeaux.

Council of the STEM Department
since June 2023
PH.D. STUDENTS SUBSTITUTE REPRESENTATIVE
Université de Bordeaux

Council of the Doctoral School of Mathematics & Computer Science (EDMI)
July. 2022 – June. 2023
PH.D. STUDENTS SUBSTITUTE REPRESENTATIVE
Université de Bordeaux

La Cinquième Parallèle
Sep. 2018 – Mar. 2019
TREASURER
Cachan, France
LGBTIQ+ association for the ENS Paris-Saclay students.

SCIENTIFIC ENGAGEMENT

Highlights of Logic, Games and Automata 2024
Sept. 2024
MEMBER OF THE ORGANIZING COMMITTEE
Bordeaux, France
SafeToc counsellor and co-organizer of the workshop on algebraic methods in automata theory.

ATLAS 24 (Workshop on Automata, Transducers, Logic, Algebras & Semigroups)
Apr. 2024
CO-ORGANIZER
Rennes, France
First edition of the workshop. 45 participants, 16 talks including two invited ones (Sreejith A V and Christof Löding). Co-organized with Thomas Colcombet, Hugo Bazille and Uli Fahrenberg.

LX Seminar (Logical foundations of computing)
since Sep. 2023
CO-ORGANIZER
Bordeaux, France
Bimonthly one-hour seminar of the LX team. Co-organized with Guillaume Lagarde (Sep. 2023 – July 2024) and Laurent Bienvenu (Sept. 2024 –).

Games reading group
Sep. 2022 – June 2023
ORGANIZER
Bordeaux, France
Weekly two-hour reading group on games, automata & logic in LaBRI.

EDBT-Intended Summer School 2022   WEBPAGE
July 2022
WEBSITE DESIGN & STUDENT VOLUNTEER

Softwares

knowledge-clustering   GITHUB   *since Feb. 2022*
Command-line tool facilitating the use of the LaTeX package knowledge.
Written in Python and co-maintained with Aliaume Lopez & Thomas Colcombet.

atomPython   GITHUB   *2018 – 2019*
A platform for simulating double-auction markets to study the behaviour of artificial agents.
Written in Python; supervised by Philippe Mathieu.

Publications

JOURNAL ARTICLES

A Deterministic Behaviour for Realistic Price Dynamics   *2019*

PHILIPPE MATHIEU, RÉMI MORVAN   DOI

Physica A: Statistical Mechanics and its applications. Elsevier

CONFERENCE PROCEEDINGS

Separating Automatic Relations   *2023*

PABLO BARCELÓ, DIEGO FIGUEIRA, RÉMI MORVAN   FULL VERSION

48th International Symposium on Mathematical Foundations of Computer Science (MFCS)

Approximation and Semantic Tree-Width of Conjunctive Regular Path Queries   *2023*

DIEGO FIGUEIRA, RÉMI MORVAN   DOI   FULL VERSION

26th International Conference on Database Theory (ICDT)

Selected for LMCS special issue.

First-order Separation over Countable Ordinals   *2022*

THOMAS COLCOMBET, SAM VAN GOOL, RÉMI MORVAN   DOI   FULL VERSION

25th International Conference on Foundations of Software Science and Computation Structures (FoSSaCS)

Universal Algorithms for Parity Games and Nested Fixpoints   *2022*

MARCIN JURDZINSKI, RÉMI MORVAN, K. S. THEJASWINI   DOI   FULL VERSION

Principles of Systems Design - Essays Dedicated to Thomas A. Henzinger on the Occasion of His 60th Birthday

PREPRINTS

The Algebras for Automatic Relations   *2024*

RÉMI MORVAN   FULL VERSION

Semantic Tree-Width and Path-Width of Conjunctive Regular Path Queries   *2023*

DIEGO FIGUEIRA, RÉMI MORVAN   FULL VERSION

MISCELLANEOUS

First-order separation of transfinite regular languages   *2021*

RÉMI MORVAN   DOI

Internship report, École normale supérieure Paris-Saclay