

Léo Exibard

Postdoctoral
Researcher

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Postdoctoral Contract

2021 – **MoVeMnt project**, *ICE-TCS*, Reykjavik University, <https://sites.google.com/view/antonisachilleos/movemnt>.

This project is dedicated to the study of runtime verification techniques, in particular *monitorability*.

PhD Thesis

2017 – 2021 **Automatic Synthesis of Systems with Data**, under the joint direction of Emmanuel Filiot and Pierre-Alain Reynier, Université Libre de Bruxelles (Belgium) and Aix-Marseille Université (France).

Publications and Talks

- 2021 **Church Synthesis on Register Automata over Linearly Ordered Data Domains**, L. Exibard, E. Filiot, A. Khalimov, STACS 2021.
- 2020 **On Computability of Data Word Functions Defined by Transducers**, L. Exibard, E. Filiot and P.-A. Reynier, FoSSaCS 2020.
An extended version was submitted to a special issue of LMCS; it was accepted with minor revisions and should be published next year.
- 2019 **Synthesis of Data Word Transducers**, L. Exibard, E. Filiot and P.-A. Reynier, CONCUR 2019.
An extended version was published in a special issue of LMCS.
- 2018 **The Complexity of Transducer Synthesis from Multi-Sequential Specifications**, L. Exibard, E. Filiot and I. Jecker, MFCS 2018.
- 2017 **Two-way Two-tape Automata**, O. Carton, L. Exibard and O. Serre, Developments in Language Theory 2017.

I presented these works at the corresponding conferences, except for the STACS 2021 one, which was presented by A. Khalimov.

Other Communications

On Computability of Data Word Functions Defined by Transducers, talk at ULB and AMU CS seminars, Highlights 2020 and MOVEP 2020. Poster at Highlights 2020.

Synthesis of Data Word Transducers, talk at the IST Austria CS seminar, at the annual meeting of the French research group GT ALGA, RP 2019, CONCUR 2019, and preliminary versions at Highlights 2018 and MOVEP 2018. Poster at the French research group GdR IM annual meeting and at EPIT 2019.

The Complexity of Transducer Synthesis from Multi-Sequential Specifications, talk at a project meeting of the ANR Delta.

Two-way Two-tape Automata, talk at AMU CS seminar.

Participation to Scientific Events

- 2020 Spotlight on Games 2020 workshop, Highlights 2020.
- 2019 GT ALGA meeting, Highlights 2019, RP 2019 (I participated in the organisation), CONCUR 2019, Gamenet workshop, GdR IM meeting.
- 2018 ANR Delta meetings, GT ALGA meeting, Highlights 2018, MFCS 2018.
- 2017 Highlights 2017, DLT 2017.
- 2016 Highlights 2016.

Research Schools

- June 2020 **MOVEP 2020**, *online*.
- April 2019 **EPIT 2019**, *dedicated to database theory*.
- March 2019 **EJCIM 2019**, *wide range of courses on CS and Mathematics*.
- June 2018 **MOVEP 2018**.
- Dec. 2017 **Second Winter School in Engineering and Computer Science**.

Reviewing

I worked as a subreviewer for the following conferences: FoSSaCS 2018, FoSSaCS 2020, LICS 2020, MFCS 2020, CSL 2021, STACS 2021 and FoSSaCS 2021.

Internships

- 2016 **Two-way Two-tape Automata**, *with Olivier Carton and Olivier Serre*, IRIF, Université Paris Diderot.
- 2015 **Game Semantics and Normalization by Evaluation for Brouwer Ordinals**, *with Peter Dybjer*, Division of Computing Science, Chalmers University of Technology.
- 2014 **Church Synthesis and Uniformization of Relations over Finite Words**, *with Emmanuel Filiot*, MFV, Université Libre de Bruxelles.

Teaching

- Autumn 2019 **Informatique Fondamentale**, Theoretical Computer Science, *Université libre de Bruxelles*.
Practicals.
- Autumns 2017, 2018 and 2019 **Introduction to Language Theory and Compiling**, *Université libre de Bruxelles*, in English.
Practicals and implementation project in Java.
- Spring 2018 **Programmation**, Programming, *Aix-Marseille Université*.
Implementation project in C.
- Spring 2018 **Algorithmique et Programmation**, Algorithms and Programming, *Aix-Marseille Université*.
Whole subject: class, practicals and exams.

Education

- 2016 – 2017 **First year of Master's Degree in General Sociology**, *École des Hautes Études en Sciences Sociales (EHESS)*, Paris.
- 2015 – 2016 **Parisian Master of Research in Computer Science (MPRI)**, *Université Paris Diderot*.
- 2014 – 2015 **First year of Master Degree in Theoretical Computer Science**, *École Normale Supérieure de Lyon*.
- Aut. 2014 **Exchange student for one semester: Master's Degree in Computer Science**, *Université Laval*, Québec, Canada.
- 2013 – 2014 **Bachelor in Theoretical Computer Science**, *École Normale Supérieure de Lyon*.
- 2010 – 2013 **Engineering Schools Preparatory Classes**, *Lycée Thiers*, Marseille, MPSI-MP*.

Languages

- French Native
- English Fluent
- Spanish Basic
- Swedish Beginner

Programming Languages

- OCaml **Advanced**
- C/C++ **Intermediate**
- Python **Intermediate**
- Java **Intermediate**
- Coq **Basics**
- L^AT_EX **Advanced**

Implementation Projects

- 2016 **Computation of Boolean Formulas and Polynomials in Coq**, *Université Paris Diderot*, Proof Assistants.
- 2016 **Compiler for a functional language with subtyping**, *Université Paris Diderot*, Functional Programming and Type Systems.
- 2015 **Binary Shape Indexer**, *ENS Lyon*, Images and Discrete Geometry.
- 2014 **Spellchecker**, *Université Laval*, Natural Language Processing.
- 2014 **Language Detector**, *Université Laval*, Natural Language Processing.
- 2014 **SAT Solver**, *ENS Lyon*, Project 2.