

Léo Exibard

Assistant Professor

LIGM
Bâtiment Copernic
5 Boulevard Descartes
77420 Champs-sur-Marne
France
☎ (+33) 6 69 12 19 07
✉ leoexibard@gmail.com
🌐 <http://www.icetcs.ru.is/leoe/>



Positions

- Sept. 2022 – **Assistant Professor**, BAAM team, LIGM, Université Gustave Eiffel, Paris Est
2021 – 2022 **Post-doctorate**, MoVeMnt project, ICE-TCS, Reykjavik University, <http://icetcs.ru.is/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

Journal Papers

- To appear **Church Synthesis on Register Automata over Linearly Ordered Data Domains**, L. Exibard, E. Filiot, A. Khalimov, FMSD special issue “Progress in Synthesis”
Extended version of the eponym STACS 2021 article.
- 2022 **Computability of Data-Word Transductions over Different Data Domains**, L. Exibard, E. Filiot, N. Lhote and P.-A. Reynier, LMCS special issue dedicated to FoSSaCS 2020
Extended version of “On Computability of Data Word Functions Defined by Transducers”.
- 2021 **Synthesis of Data Word Transducers**, L. Exibard, E. Filiot and P.-A. Reynier, LMCS special issue dedicated to CONCUR 2019
Extended version of the eponym CONCUR 2019 article.

Conferences Papers

- 2022 **A Monitoring Tool for Linear-Time μ HML**, L. Aceto, A. Achilleos, D. Paul Attard, L. Exibard, A. Francalanza and A. Ingólfssdóttir, COORDINATION 2022
Best Paper Award at DisCoTeC 2022.
- 2022 **A Synthesis Tool for Optimal Monitors in a Branching-Time Setting**, A. Achilleos, L. Exibard, A. Francalanza, K. Lehtinen and J. Xuereb, COORDINATION 2022
- 2022 **A Generic Solution to Register-bounded Synthesis with an Application to Discrete Orders**, L. Exibard, E. Filiot and A. Khalimov, ICALP 2022
- 2021 **Church Synthesis on Register Automata over Linearly Ordered Data Domains**, L. Exibard, E. Filiot and A. Khalimov, STACS 2021
- 2020 **On Computability of Data Word Functions Defined by Transducers**, L. Exibard, E. Filiot and P.-A. Reynier, FoSSaCS 2020
- 2019 **Synthesis of Data Word Transducers**, L. Exibard, E. Filiot and P.-A. Reynier, CONCUR 2019

- 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*, DLT 2017

Talks

- May 2023 **A Generic Solution to Register-bounded Synthesis**, Dagstuhl seminar on “Regular Transformations”
- May 2023 **A Generic Solution to Register-bounded Synthesis**, MPI Kaiserslautern
- Dec. 2022 **Runtime monitoring for Hennessy-Milner logic with recursion over systems with data**, “Automata” Seminar, IRIF
- July. 2022 **Runtime monitoring for Hennessy-Milner logic with recursion over systems with data**, LIGM Seminar
- Nov. 2021 **Synthesis over Infinite Domains through Machines with Registers**, Annual meeting of the Verification research group
Invited speaker.
- Nov. 2021 **History-deterministic Register Automata**, NWPT 2021
- April 2021 **On Computability of Data Word Functions Defined by Transducers**, FoSSaCS 2021
As FoSSaCS 2020 has been canceled, I presented the results at the 2021 edition, online.
- Nov. 2020 **On Computability of Data Word Functions Defined by Transducers**, Joint MFV (ULB) and LIS (AMU) seminar
Online.
- Sept. 2020 **On Computability of Data Word Functions Defined by Transducers**, HIGHLIGHTS 2020 conference
Online.
- June 2020 **On Computability of Data Word Functions Defined by Transducers**, MOVEP 2020 summer school
Online. I also presented a poster.
- Nov. 2019 **Synthesis of Data Word Transducers**, IST Austria, Klosterneuburg, Austria
Invited speaker.
- Oct. 2019 **Synthesis of Data Word Transducers**, Annual meeting of the Automata, Logic, Games and Algebra (ALGA) research group, Paris, France
- Sept. 2019 **Synthesis of Data Word Transducers**, Reachability Problems (RP) 2019 conference, Brussels, Belgium
- Aug. 2019 **Synthesis of Data Word Transducers**, CONCUR 2019 conference, Amsterdam, the Netherlands
- May 2019 **Synthesis of Data Word Transducers**, Seminar of the Centre Fédéré de Vérification (CFV), Brussels, Belgium
- Dec. 2018 **The Complexity of Transducer Synthesis from Multi-Sequential Specifications**, MFCS 2018 conference, Liverpool, United Kingdom
- Sept. 2018 **Synthesis of Data Word Transducers**, HIGHLIGHTS 2018 conference, Berlin, Germany
Preliminary results
- July 2018 **Synthesis of Data Word Transducers**, MOVEP 2018 summer school, Cachan, France
Preliminary results
- Aug. 2018 **The Complexity of Transducer Synthesis from Multi-Sequential Specifications**, Annual meeting of the ANR project Delta, Bordeaux, France

- Feb. 2018 **Two-way Two-tape Automata**, MoVe team seminar, Marseille, France
Aug. 2017 **Two-way Two-tape Automata**, DLT 2017 conference, Liège, Belgium

Participation to Scientific Events

- 2023 Dagstuhl seminar on “Regular Transformations”, Workshop “Avancées dans la théorie des réseaux écologiques: vers une intégrations des relations entre communautés et écosystèmes”, MEE Conference.
2022 LC 2022 (I participated in the organisation), ICALP 2022.
2021 GT Verif meeting, NWPT 2021.
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

- Jan. 2023 **Discrete mathematics and logic : between mathematics and the computer science**, *CIRM*
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**

Community Service

- Organisation I am organising the YR-CONCUR 2023 workshop.
Organisation I contributed to the organisation of RP 2019 and LC 2022.
PC I served in the Program Committee of GandALF 2023.
Journal I worked as a subreviewer for the following journals: FMSD, TCS
reviews
Conference I worked as a subreviewer for the following conferences: FoSSaCS 2018, FoSSaCS 2020,
reviews LICS 2020, MFCS 2020, CSL 2021, STACS 2021 and FoSSaCS 2021, STACS 2021, STACS 2022, FoSSaCS 2022, LICS 2022, MFCS 2022, STACS 2023, CONCUR 2023.

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

- Spring 2023 **Compilation**, Compiling, *Université Gustave Eiffel*, L3
Practicals and implementation project of a compiler in C.

- Spring 2023 **Algorithmique des arbres**, Algorithms on Trees, *Université Gustave Eiffel*, L2
Practicals.
- Spring 2023 **Algorithmique et Programmation 2**, Algorithms and Programming 2, *Université Gustave Eiffel*, L1
Practicals and implementation project in Python.
- Autumn 2022 **Analyse Syntaxique**, Syntactical Analysis, *Université Gustave Eiffel*, L3
Practicals and implementation project of a parser in C.
- Autumn 2022 **Algorithmique et Programmation 1**, Algorithms and Programming 1, *Université Gustave Eiffel*, L1
Practicals.
- Spring 2022 **Discrete Mathematics II**, *Reykjavik University*, L1, in English
Practicals.
- Autumn 2019 **Informatique Fondamentale**, Theoretical Computer Science, *Université libre de Bruxelles*, L3
Practicals.
- Autumns 2017, 2018 and 2019 **Introduction to Language Theory and Compiling**, *Université libre de Bruxelles*, M1, in English
Practicals and implementation project in Java.
- Spring 2018 **Programmation**, Programming, *Aix-Marseille Université*, L1
Implementation project in C.
- Spring 2018 **Algorithmique et Programmation**, Algorithms and Programming, *Aix-Marseille Université*, L1
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
Italian	Basic
Icelandic	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