

# ALEXANDRE GOY

CURRENT POSITION	Postdoctoral researcher, ENS Lyon, France
POSTAL ADDRESS	LIP 46, allée d'Italie 69364 Lyon, France
INTERESTS	Category theory, automata, coalgebra, logic, probability theory
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GOOGLE SCHOLAR	<a href="https://scholar.google.com/citations?user=Alexandre Goy">Alexandre Goy</a>
RESEARCHGATE	<a href="https://www.researchgate.net/profile/Alexandre-Goy2">Alexandre_Goy2</a>
DBLP	<a href="https://dblp.org/p/0002/Alexandre Goy">Alexandre Goy 0002</a>

## EXPERIENCE

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### Postdoctoral researcher

*ENS Lyon, France, 2021 - present*

Member of the PLUME team at LIP. Research with Matteo Mio on the theory of Riesz spaces towards formal verification and certification of probabilistic software.

## EDUCATION

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### PhD in Computer Science

*Paris-Saclay University, France, 2018 - 2021*

Thesis title: *On the Compositionality of Monads via Weak Distributive Laws*, under the supervision of Marc Aiguier (MICS, Paris-Saclay University) and Daniela Petrişan (IRIF, Paris-Diderot University). Defended on 19 October 2021.

### MSc in Engineering

*CentraleSupélec, France, 2018*

Thesis title: *Morpho-Logic and the Theorem of Łoś*, under the supervision of Marc Aiguier (MICS, Paris-Saclay University). Major in mathematics, 1st out of 95.

### MSc in Mathematical Logic and Foundations of Computer Science

*Paris-Diderot University, France, 2017*

Thesis title: *Trace Semantics via Determinization for Probabilistic Transition Systems*, under the supervision of Jurriaan Rot (ICIS, Radboud University Nijmegen).

### BSc in Mathematics

*Paris-Saclay University, France, 2015*

## PUBLICATIONS

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- (1) Alexandre Goy. *On the Compositionality of Monads via Weak Distributive Laws*, PhD thesis.
- (2) Alexandre Goy, Daniela Petrişan, Marc Aiguier. *Powerset-like Monads Weakly Distribute over Themselves in Toposes and Compact Hausdorff Spaces*. ICALP 2021: 132:1-132:14.
- (3) Alexandre Goy, Daniela Petrişan. *Combining Probabilistic and Non-Deterministic Choice via Weak Distributive Laws*. LICS 2020: 454-464.
- (4) Alexandre Goy, Marc Aiguier, Isabelle Bloch. *From Structuring Elements to Structuring Neighborhood Systems*. ISMM 2019: 16-28.
- (5) Alexandre Goy, Jurriaan Rot. *(In)finite Trace Equivalence of Probabilistic Transition Systems*. CMCS 2018: 100-121.
- (6) Alexandre Goy. *Trace Semantics via Determinization for Probabilistic Transition Systems*, MSc thesis. CoRR abs/1802.09084, 2017.

## TEACHING

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### Teaching Assistant

CentraleSupélec, France, 2017 - 2021

For BSc/MSc in Engineering students.

- *Support in Programming*, 45h;
- *Support in Mathematics*, 13h;
- *Algorithms*, 39h;
- *Theoretical Computer Science*, 84h;
- *Game Theory*, 12h;
- Volunteer Teaching Assistant for *Support in Mathematics*, 4h per week in 2017-2018.

## TALKS

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- *Powerset-like Monads Weakly Distribute over Themselves in Toposes and Compact Hausdorff Spaces*, ICALP, July 2021.
- *An Overview of Weak Distributive Laws*, SMP (LICS Workshop), June 2021.
- *Alternating Automata via Weak Distributive Laws*, CMCS, September 2020.
- *Alternating Automata via Weak Distributive Laws*, HIGHLIGHTS, September 2020.
- *Combining Probabilistic and Non-Deterministic Choice via Weak Distributive Laws*, LICS, July 2020.
- *From Structuring Elements to Structuring Neighborhood Systems*, ISMM, July 2019.
- *Dual Logic Concepts based on Mathematical Morphology in Stratified Institutions: Applications to Spatial Reasoning*, UNILog, June 2018.
- *(In)finite Trace Equivalence of Probabilistic Transition Systems*, CMCS, April 2018.

## PARTICIPATION IN EVENTS

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- *Structure Meets Power*, LICS Workshop, June 2021 (online).
- *ETAPS 2020/2021*, March 2021 (online).
- *Coalgebraic Methods in Computer Science*, September 2020 (online).
- *Highlights*, September 2020 (online).
- *International Symposium in Mathematical Morphology*, Saarbrücken, Germany, July 2019.
- *Topology, Algebra and Categories in Logic*, Nice, France, June 2019.
- *TACL Summer School*, Porquerolles, France, June 2019.
- *ForMal Summer School*, Cachan, France, June 2019.
- *Universal Logic*, Vichy, France, June 2018.
- *Coalgebraic Methods in Computer Science* (ETAPS Workshop), Thessaloniki, Greece, April 2018.

## ORGANISATION OF EVENTS

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- Member of the programme committee for SYCO 8.
- Reviewer for SYCO 8 (3 papers), CMCS 2020 (1 paper), IJCAI 2020 (3 papers), Journal of Applied Non-Classical Logics (1 paper).
- Support in the organisation of CMCS 2020 (online).

## OTHER

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### *Spoken Languages*

FRENCH	Mother tongue
ENGLISH	Fluent
GERMAN	Intermediate

### *Technical Skills*

PROGRAMMING LANGUAGES	Python, OCaml, Prolog
THEOREM PROVER	Coq
OTHER	LaTeX

October 31, 2021