

# Pierre Ohlmann

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## Experience

<b>CNRS, Laboratoire D'informatique et des systèmes (LIS), Aix-Marseille Université</b> <i>Researcher</i>	<b>Marseille, France</b> <i>Jan 2024 - Current</i>
<b>Faculty of Mathematics, Informatics and Mechanics, University of Warsaw</b> <i>Postdoc, supervised by Michał Pilipczuk</i>	<b>Warsaw, Poland</b> <i>Jan 2022 - Dec 2024</i>
<b>Institut de Recherche en Informatique Fondamentale</b> <i>PhD, supervised by Olivier Serre and Nathanaël Fijalkow</i>	<b>Paris, France</b> <i>Sept 2018 - Oct 2021</i>
<b>Institut de Recherche en Informatique Fondamentale</b> <i>Master's student internship, supervised by Olivier Serre and Nathanaël Fijalkow</i>	<b>Paris, France</b> <i>Jan - Jun 2018</i>
<b>Alan Turing Institute of Data Science &amp; University College London</b> <i>Master's student internship, supervised by Nathanaël Fijalkow and Alexandra Silva</i>	<b>London, UK</b> <i>Apr - Jun 2017</i>
<b>Oxford Computer Science Department</b> <i>Master's student internship, supervised by Joël Ouaknine and James Worrell</i>	<b>Oxford, UK</b> <i>May - Jul 2016</i>
<b>Laboratoire I3S Nice Sophia Antipolis</b> <i>Undergraduate student internship, supervised by Julien Provillard</i>	<b>Sophia Antipolis, France</b> <i>Jun - Jul 2015</i>

## Education

<b>École Normale Supérieure de Lyon</b> <i>Master's degree of Computer Science (2<sup>nd</sup> year), awarded with highest honors, ranked first</i>	<b>Lyon, France</b> <i>Sept 2017 - Jun 2018</i>
<b>Université Pierre et Marie Curie</b> <i>Master's degree of Mathematics (1<sup>st</sup> year), awarded with highest honors, ranked first</i>	<b>Paris, France</b> <i>Sept 2016 - May 2017</i>
<b>École Normale Supérieure de Lyon</b> <i>Master's degree of Computer Science (1<sup>st</sup> year), awarded with highest honors</i>	<b>Lyon, France</b> <i>Sept 2015 - May 2016</i>
<b>École Normale Supérieure de Lyon</b> <i>Undergraduate degree in Computer Science, awarded with highest honors</i>	<b>Lyon, France</b> <i>Sept 2014 - Jun 2015</i>
<b>Lycée Kleber</b> <i>Classes préparatoires aux grandes écoles</i>	<b>Strasbourg, France</b> <i>Sept 2012 - Jun 2014</i>

## Publications

<b>Peer-reviewed journals</b> .....	
<b>Hardness of monadic second-order formulae over succinct graphs</b> <i>With Guilhem Gamard, Aliénor Goubault-Larrecq, Pierre Guillon, Kévin Perrot, Guillaume Theyssier</i>	<b>LMCS</b> <i>2026</i>
<b>On the Monniaux Problem in abstract interpretation</b> <i>With Nathanaël Fijalkow, Engel Lefauchaux, Joël Ouaknine, Amaury Pouly and James Worrell</i>	<b>JACM</b> <i>2024</i>
<b>Characterising memory in infinite games</b> <i>With Antonio Casares</i>	<b>Logical Methods in Computer Science</b> <i>2024</i>
<b>Characterizing positionality in games of infinite duration over infinite graphs</b> <i>Single author</i>	<b>TheoretCS</b> <i>2023</i>
<b>Controlling a random population</b> <i>With Nathanaël Fijalkow and Thomas Colcombet</i>	<b>Logical Methods in Computer Science</b> <i>2022</i>
<b>The theory of universal graphs for infinite duration games</b> <i>With Nathanaël Fijalkow and Thomas Colcombet</i>	<b>Logical Methods in Computer Science</b> <i>2021</i>

<b>Lower bounds for arithmetic circuits via the Hankel matrix</b> <i>With Nathanaël Fijalkow, Guillaume Lagarde and Olivier Serre</i>	<b>Computational Complexity</b> 2021
<b>Semialgebraic invariant synthesis for the Kannan-Lipton orbit problem</b> <i>With Nathanaël Fijalkow, Joël Ouaknine, Amaury Pouly and James Worrell</i>	<b>Theory of Computing Systems</b> 2019
<a href="#">Proceedings of peer-reviewed international conferences</a> .....	
<b>The memory of omega-regular and BC(Sigma02) objectives</b> <i>With Antonio Casares</i>	<b>ICALP</b> 2025
<b>Graphs of unbounded linear cliquewidth must transduce all trees</b> <i>With Mikołaj Bojanczyk</i>	<b>LICS</b> 2025
<b>Fast value iteration: A uniform approach to efficient algorithms for energy games</b> <i>With Michaël Cadhillac, Antonio Casares</i>	<b>TACAS</b> 2025
<b>Rank-decreasing transductions</b> <i>With Mikołaj Bojanczyk</i>	<b>LICS</b> 2024
<b>Positional omega-regular languages</b> <i>With Antonio Casares</i>	<b>LICS</b> 2024
<b>Positionality in Sigma2 and a completeness result</b> <i>With Michał Skrzypczak</i> <i>Invited for publication in LMCS special issue</i>	<b>STACS</b> 2024
<b>Flipper games for monadically stable graph classes</b> <i>With J. Gajarský, N. Mählmann, R. McCarty, Mi. Pilipczuk, W. Przybyszewski, S. Siebertz, M. Sokołowski and S. Toruńczyk</i>	<b>ICALP</b> 2023
<b>Canonical decompositions in monadically stable and bounded shrubdepth graph classes</b> <i>With Michał Pilipczuk, Wojciech Przybychewski and Szymon Toruńczyk</i>	<b>ICALP</b> 2023
<b>Characterising memory in infinite games</b> <i>With Antonio Casares</i>	<b>ICALP</b> 2023
<b>A technique to speed up symmetric attractor-based algorithms for parity games</b> <i>With Marcin Jurdziński and K. S. Thejaswini</i>	<b>FSTTCS</b> 2022
<b>Characterizing positionality in games of infinite duration over infinite graphs</b> <i>Single author</i>	<b>LICS</b> 2022
<b>The GKK Algorithm is the Fastest over Simple Mean-Payoff Games</b> <i>Single author</i> <i>Best paper award</i>	<b>CSR</b> 2022
<b>Scaling Neural Program Synthesis with Distribution-based Search</b> <i>With Nathanaël Fijalkow, Guillaume Lagarde, Théo Matricon, Kevin Ellis and Akarsh Potta</i> <i>Selected for publication (5% of papers)</i>	<b>AAAI</b> 2022
<b>New Algorithms for Combinations of Objectives using Separating Automata</b> <i>With Ashwani Anand, Nathanaël Fijalkow, Aliénor Goubault-Larrecq and Jérôme Leroux</i> <i>Invited for publication in LMCS special issue</i>	<b>Gandalf</b> 2021
<b>The complexity of mean payoff games using universal graphs</b> <i>With Nathanaël Fijalkow and Paweł Gawrychowski</i>	<b>MFCS</b> 2020
<b>Lower bounds for arithmetic circuits via the Hankel matrix</b> <i>With Nathanaël Fijalkow, Guillaume Lagarde and Olivier Serre</i>	<b>STACS</b> 2022
<b>Controlling a Random Population</b> <i>With Nathanaël Fijalkow and Thomas Colcombet</i> <i>Invited for publication in LMCS special issue</i>	<b>FoSSaCS</b> 2020
<b>On the Monniaux Problem in Abstract Interpretation</b> <i>With N. Fijalkow, E. Lefauchaux, J. Ouaknine, A. Pouly and J. Worrell</i>	<b>SAS</b> 2019

## Semialgebraic Invariant Synthesis for the Kannan-Lipton Orbit Problem

With Nathanaël Fijalkow, Joël Ouaknine, Amaury Pouly and James Worrell

Invited for publication in ToCS special issue

STACS

2017

Preprints (unpublished).....

### A positional $\Pi_3$ -complete objective

With Antonio Casares, Pierre Vandenhove

arxiv

2024

## Talks

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Presentations in international conferences and workshop.....

### ATLAS

Workshop on automata theory

Rennes, France

Apr 2024

### STACS 2024

International conference on Theoretical Computer Science

Clermont-Ferrand, France

Mar 2024

### ICALP 2023

International colloquium on Automata, Languages and Programming

Paderborn, Germany

Jul 2023

### LICS 2022

International conference on Logics in Computer Science

Haifa, Israël

Aug 2022

### CSR 2022

International conference on Theoretical Computer Science

Online

Jun 2022

### Highlights of Logics, Games and Automata 2022

International conference on Logics, Games and Automata

Paris, France

Jun 2022

### Automata Theory and Applications: Games, Learning and Structures

International workshop on automata theory, hosted by national university of Singapore

Online

Sep 2021

### Highlights of Logics, Games and Automata 2021

International conference on Logics, Games and Automata

Online

Sep 2021

### FoSSaCS 2021

International conference on Theoretical Computer Science

Online

Mar 2021

### Spotlight on Games Workshop 2020

International workshop on Games

Online

Nov 2020

### Highlights of Logics, Games and Automata 2020

International conference on Logics, Games and Automata

Online

Sep 2020

### STACS 2020

International conference on Theoretical Computer Science

Montpellier, France

Mar 2020

### Highlights of Logics, Games and Automata 2019

International conference on Logics, Games and Automata

Warsaw, Poland

Sep 2019

### RP 2019

International conference on Reachability Problems (talk only presentation)

Brussels, Belgium

Sep 2019

### FILOFOCS 2018

International workshop on Foundations of Computer Science

Paris, France

Oct 2018

### Highlights of Logics, Games and Automata 2018

International conference on Logics, Games and Automata

Berlin, Germany

Sep 2018

### WACT 2018

International workshop on Algebraic Complexity Theory

Paris, France

Mar 2018

### STACS 2017

International conference on Theoretical Computer Science

Hannover, Germany

Mar 2017

Presentations in seminars and research project meetings.....

<b>MOVE seminar</b> <i>Weekly seminar in model-checking and verification team at LIS lab, team MOVE</i>	<b>Marseille, France</b> <i>May 2024</i>
<b>Journées scientifiques du LIS</b> <i>Scientific days of the lab</i>	<b>Carry-le-Rouet, France</b> <i>May 2024</i>
<b>GT DAAL meeting</b> <i>Yearly meeting of national working group</i>	<b>Rennes, France</b> <i>Apr 2024</i>
<b>LIS pole calcul seminar</b> <i>Monthly pole seminar in LIS</i>	<b>Marseille, France</b> <i>Mar 2023</i>
<b>MIMUW seminar</b> <i>Weekly seminar in automata theory team at MIMUW</i>	<b>Warsaw, Poland</b> <i>Jun 2023</i>
<b>MOVE seminar</b> <i>Weekly seminar in model-checking and verification team at LIS lab, team MOVE</i>	<b>Marseille, France</b> <i>Dec 2022</i>
<b>Kolmogorov seminar on complexity</b> <i>Weekly team seminar</i>	<b>Online</b> <i>Nov 2022</i>
<b>M2F seminar</b> <i>Bi-monthly seminar for formal methods and models department in LaBRI</i>	<b>Bordeaux, France</b> <i>Oct 2022</i>
<b>LMF seminar</b> <i>Weekly seminar in model-checking and synthesis team at LMF lab</i>	<b>Saclay, France</b> <i>Oct 2022</i>
<b>MC2 seminar</b> <i>Weekly seminar in computation, complexity and combinatorics team at LIP</i>	<b>Lyon, France</b> <i>Oct 2022</i>
<b>IRIF seminar</b> <i>Weekly seminar in automata team at IRIF</i>	<b>Paris, France</b> <i>Apr 2022</i>
<b>MIMUW seminar</b> <i>Weekly seminar in algorithms team at MIMUW</i>	<b>Warsaw, Poland</b> <i>Jan 2022</i>
<b>MIMUW seminar</b> <i>Weekly seminar in automata theory team at MIMUW</i>	<b>Warsaw, Poland</b> <i>Jan 2022</i>
<b>LMF seminar</b> <i>Weekly seminar in model-checking and synthesis team at LMF lab</i>	<b>Saclay, France</b> <i>Nov 2021</i>
<b>PLUME seminar</b> <i>Weekly seminar in PLUME team at LIP lab</i>	<b>Lyon, France</b> <i>Nov 2021</i>
<b>MOVE seminar</b> <i>Weekly seminar in MOVE team at LIS lab</i>	<b>Marseille, France</b> <i>Nov 2021</i>
<b>LINKS seminar</b> <i>Weekly seminar in LINKS project at CRISAL lab, held online</i>	<b>Lille, France</b> <i>Jun 2021</i>
<b>LMF verification seminar</b> <i>Weekly seminar in the verification team of LMF, held online</i>	<b>Gif-sur-Yvettes, France</b> <i>Apr 2021</i>
<b>TFCS seminar</b> <i>Seminar at spring research program of Simons Institute, held online</i>	<b>Berkley, USA</b> <i>Mar 2021</i>
<b>YR-OWLS seminar</b> <i>International weakly seminar on semantics and logics (young researcher track), held online</i>	<b>Worldwide</b> <i>Mar 2021</i>
<b>MIMUW automata theory seminar</b> <i>Weekly seminar in the automata team of MIMUW, held online</i>	<b>Warsaw, Poland</b> <i>Mar 2021</i>
<b>Journées ASV</b> <i>Local research group annual meeting, held online</i>	<b>Paris, France</b> <i>Oct 2020</i>

<b>LaBRI seminar</b> <i>Weekly seminar in the formal methods team of LaBRI, held online</i>	<b>Bordeaux, France</b> <i>Apr 2020</i>
<b>IRIF seminar</b> <i>Weekly seminar in the automata team of IRIF, held online</i>	<b>Paris, France</b> <i>Apr 2020</i>
<b>IRISA seminar</b> <i>Weekly seminar in the algorithm team of IRISA</i>	<b>Rennes, France</b> <i>Jan 2020</i>
<b>LACL seminar</b> <i>Weekly seminar in the algorithm team of LACL</i>	<b>Créteil, France</b> <i>Jan 2020</i>
<b>GDR ALGA meeting</b> <i>Reseach group meeting on themes related to automata and game theory</i>	<b>Paris, France</b> <i>Oct 2019</i>
<b>LIGM seminar</b> <i>Weekly seminar in the algorithm team of LIGM</i>	<b>Marne-la-Vallée, France</b> <i>Feb 2019</i>
<b>ANR Codys</b> <i>Research project meeting on dynamical systems and applications</i>	<b>meeting Paris, France</b> <i>Nov 2018</i>
<b>Cambridge seminar</b> <i>Weekly seminar in the Logics and Semantics group of the Computer Science department</i>	<b>Cambridge, UK</b> <i>Nov 2018</i>
<b>IRIF seminar</b> <i>Weekly seminar in the automata team of IRIF</i>	<b>Paris, France</b> <i>Sep 2018</i>
<b>GDR ALGA meeting</b> <i>Research group meeting on themes related to automata and game theory</i>	<b>Lille, France</b> <i>Oct 2018</i>
<b>ANR COMPA meeting</b> <i>Research project meeting on Algebraic Complexity Theory</i>	<b>Lyon, France</b> <i>Sept 2018</i>
<b>LABRI seminar</b> <i>Weekly seminar in the formal methods team in LABRI</i>	<b>Bordeaux, France</b> <i>Apr 2018</i>
<b>ANR DELTA meeting</b> <i>Research project meeting on transducers and automata theory</i>	<b>Paris, France</b> <i>Mar 2018</i>
<b>Alan Turing Institute seminar</b> <i>Weekly seminar in the Alan Turing Institute of Data Science</i>	<b>London, UK</b> <i>Jun 2017</i>
<b>IRIF seminar</b> <i>Weekly seminar in the automata team in IRIF</i>	<b>Paris, France</b> <i>May 2017</i>

## Teaching and supervising

<b>Co-supervised 6 weeks research internship of Olivier Idir on combinatorial games</b> <i>Along with Olivier Serre and Mathieu Mari</i>	<b>IRIF, Paris, France</b> <i>Jun 2020 - Jul 2020</i>
<b>Invited lecture on infinite duration games</b> <i>Game theory techniques in computer science, 3 hours</i> Master Parisien de Recherche en Informatique Invited lecture on infinite duration games	<b>Paris, France</b> <i>Oct 2023</i>
<b>Invited lectures on infinite duration games</b> <i>Algorithmic aspects of game theory, 6 hours</i>	<b>University of Warsaw, Poland</b> <i>May 2022</i>
<b>Teacher assistant in M2</b> <i>Algorithmic aspects of game theory, 24 hours</i>	<b>University of Warsaw, Poland</b> <i>Jan 2022 - Jun 2022</i>
<b>Teacher assistant in L2</b> <i>Profesionnalizing project, 20 hours</i>	<b>Université de Paris, France</b> <i>Sep 2020 - Jan 2021</i>
<b>Teacher assistant in L1</b> <i>Introduction to programming in Java, 32 hours</i>	<b>Université de Paris, France</b> <i>Sep 2020 - Jan 2021</i>
<b>Teacher assistant in L1</b> <i>Principles of binary machines, 32 hours</i>	<b>Université de Paris, France</b> <i>Sep 2020 - Jan 2021</i>

<b>Teacher assistant in L2</b> <i>Introduction to automata theory, 32 hours</i>	<b>Université Paris Diderot, France</b> <i>Sep 2019 - Jan 2020</i>
<b>Teacher assistant in L1</b> <i>Basics of programming in Python, 32 hours</i>	<b>Université Paris Diderot, France</b> <i>Sep 2019 - Jan 2020</i>
<b>Teacher assistant in L1</b> <i>Basics of programming in Python, 32 hours</i>	<b>Université Paris Diderot, France</b> <i>Sep 2018 - Jan 2019</i>
<b>Teacher assistant in L2</b> <i>Principles of Object-Oriented programming, 32 hours</i>	<b>Université Paris Diderot, France</b> <i>Sep 2018 - Jan 2019</i>

## Other

<b>Participation to program committees for international conferences</b> .....	
<b>PC member for MFCS</b> <i>Annual international conference</i>	2025
<b>PC member for CSL</b> <i>Annual international conference</i>	2024
<b>PC member for CSR</b> <i>Annual international conference</i>	2022
<b>Reviewing for international conferences and journals</b> .....	
<b>Subreviewing for conferences or journals (Total:31)</b> <i>LICS (x10), ICALP (x10), STACS (x3), SODA (x2), MFCS (x2), FI (x1), ...</i>	
<b>Organisation of scientific events</b> .....	
<b>LMW@CSL 2023</b> <i>Logic mentoring workshop at CSL conference</i>	2023
<b>Automata seminar</b> <i>Weekly team seminar at IRIF</i>	2019-2021
<b>Highlights of Logics, Games and automata 2020</b> <i>Annual international conference, held online</i>	2020
<b>FOCS 2018</b> <i>Student volunteer for international conference</i>	2018
<b>Participation to scientific events</b> .....	
<b>CIRM thematic month</b> <i>month-long seminar on Groups, Dynamics, Complexity and Words</i>	<b>Marseille, France</b> <i>Feb 2024</i>
<b>Dagstuhl seminar</b> <i>International workshop on Reactive Synthesis</i>	<b>Dagstuhl, Germany</b> <i>Sept 2023</i>
<b>Workshop on graph theory</b> <i>First workshop on twin-width</i>	<b>Aussois, France</b> <i>May 2023</i>
<b>Autobóz 2022</b> <i>Problem-solving based workshop on TCS</i>	<b>Sobótka, Poland</b> <i>September 2022</i>
<b>Algomanet research school in combinatorics</b> <i>Research school on posets and product theorems for planar graphs</i>	<b>Kraków, Poland</b> <i>May 2022</i>
<b>Parameterized Algorithms Retreat of University of the Warsaw</b> <i>International workshop on parameterized complexity</i>	<b>Bendlewo, Poland</b> <i>Mar 2022</i>
<b>Research retreat</b> <i>International workshop on reactive synthesis</i>	<b>Hauteluce, France</b> <i>Mar 2022</i>

**Dagstuhl seminar**

*International workshop on Unambiguity in automata theory*

**Dagstuhl, Germany**

*Nov 2021*

**Automata Theory and Applications: Games, Learning and Structures**

*International workshop on automata theory, hosted by national university of Singapore*

**Online**

*Sep 2021*

**Simons Institute spring 2021 research program**

*International workshop on Theoretical Foundations of Computer Science, held online*

**Berkeley, USA**

*Jan 2021 - May 2021*

**Caleidoscope 2019 IHP**

*Research school on computational complexity*

**Paris, France**

*Jun 2019*

**Bellairs workshop on Learning and Verification**

*International workshop on Learning and Verification*

**Holetown, Barbados**

*Mar 2019*

**CAALM 2019**

*French-Indian workshop on Logics and Algorithms*

**Chennai, India**

*Jan 2019*

**ProbProgSchool 2017**

*Summer school on Foundations of Probabilistic Programming*

**Braga, Portugal**

*Jun 2017*