



Nicolas WALDBURGER

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Born on 28/11/1997
Nationality: French

EDUCATION

- 2020 – 2021 **MASTER PARISIEN DE RECHERCHE EN INFORMATIQUE**, PARIS, FRANCE
- Theoretical training in France's top Master degree in Computer Science research
 - Followed courses on topics such as Automata, Game Theory, Algorithmics and Logic
- 2017 – 2020 **ÉCOLE POLYTECHNIQUE**, PALAISEAU, FRANCE
- France's leading school of science and engineering
 - Multidisciplinary training in second year, theoretical Computer Science specialization in third year (Algorithmics & randomization, computational logic, compilation...)
 - Cumulative GPA: 3.91/4, ranked 36th out of 540 students

EXPERIENCE

- OCT. 2021 – TODAY **PHD STUDENT**, SUMO TEAM, IRISA, RENNES, FRANCE
- Working on a theoretical project with Nathalie Bertrand, Nicolas Markey and Ocan Sankur about *parameterized Verification of round-based shared-memory systems*
 - Developing mathematical tools towards automated parameterized verification of a specific class of distributed algorithms such as Aspnes' consensus algorithm
- OCT. 2021 – MAY 2023 **TEACHING ASSISTANT**, UNIVERSITE DE RENNES, RENNES, FRANCE
- In *License 1* at ISTIC for INF1 (basics of programming) in 2021-2022
 - In *License 2* at ISTIC for PO (object-oriented programming) in 2022-2023
 - In *License 3* at ISTIC for PRG1 (advanced programming) in 2022-2023
 - In *License 3* at ENS Rennes for ALGO2 (algorithmics) in 2021-2022 and 2022-2023
- MAR. 2021 – AUG. 2021 **RESEARCH INTERN**, IRIF, PARIS, FRANCE
- Carried out a project of theoretical Computer Science with Thomas Colcombet (supervisor) and Gabriele Puppis on *Fixpoint Automata and omega-machines*
 - Defined a new class of tree automata using fixpoint calculation and countable ordinals
- APR. 2020 – AUG. 2020 **RESEARCH INTERN**, IRIF, PARIS, FRANCE
- Carried out a project of theoretical Computer Science with Mahsa Shirmohammadi (supervisor) on *Reachability in 1-VASS with equality and disequality tests*
 - Managed to prove NP-completeness in a special case of the previous problem
 - Received the *Grand Prix du stage de recherche*, awarded best research internship by the Computer Science Department of *Ecole Polytechnique*
- JUN. 2019 – AUG. 2019 **INTERN**, ROHDE & SCHWARZ, MUNICH, GERMANY
- Contributed to the establishment of test protocols by developing Python scripts

PUBLICATIONS

- 2022
 - Nathalie Bertrand, Nicolas Markey, Ocan Sankur and Nicolas Waldburger. *Parameterized safety verification of round-based shared-memory systems*. International Colloquium on Automata, Languages and Programming 2022 (ICALP'22).
- 2023
 - Nicolas Waldburger. *Checking Presence Reachability Properties on Parameterized Shared-Memory Systems*. International Symposium on Mathematical Foundations of Computer Science 2023 (MFCS'23).

OTHER COMPLETED RESEARCH PROJECTS

- 2020
 - Reachability in 1-VASS with disequality tests, with Mahsa Shirmohammadi.
- 2021
 - Fixpoint automata and omega-machines, with Thomas Colcombet and Gabriele Puppis.
- 2022-2023
 - Broadcast networks of register automata, with Lucie Guillou and Corto Mascle.

TALKS AT CONFERENCES AND SEMINARS

- 2020
 - Highlights'20 (September 2020, online)
- 2021
 - GT VERIF (November 2021, Paris)
- 2022
 - ELSE seminar (June 2022, Rennes); MOVEP'22 (June 2022, Aalborg); ICALP'22 (June 2022, Paris); RP'22 (October 2022, Kaiserslautern); IRIF Verification seminar (November 2022, Paris)
- 2023
 - ELSE seminar (March 2023, Rennes); SynCoP'23 (April 2023, Paris); MoVe seminar (June 2023, Marseille); Highlights'23 (July 2023, Kassel); MFCS'23 (August 2023, Bordeaux); D4 day (October 2023, Rennes)

KEY SKILLS

- Languages:*
 - **French:** Native, **English:** Fluent (C1/C2), **German:** Advanced (B2/C1)
- Programming:*
 - **LateX, Python, C/C++, Ocaml, Java, Coq, Agda, Lustre**