

# Leonardo Kawakami Pacheco

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Born: October 19, 1994

## Education

- 2020–     PhD Candidate in Mathematics at Tohoku University  
Thesis: Exploring the difference hierarchies on  $\mu$ -calculus and arithmetic — from the point of view of Gale–Stewart games  
Advisor: Keita Yokoyama  
Expected to graduate on March 2023.
- 2018–2020     Master in Mathematics at Tohoku University  
Thesis: On the weak hierarchy of  $\mu$ -calculus  
Advisor: Kazuyuki Tanaka
- 2014–2017     Undergraduate in Mathematics at Universidade Federal de Goiás, Brazil
- 2012–2013     Undergraduate in Computer Science (interrupted) at Universidade Federal de Goiás, Brazil

## Complementary Education

- 2019     IMS Graduate Summer School in Logic at NUS, Singapore
- 2016     IMS Graduate Summer School in Logic at NUS, Singapore

## Teaching

- 2021     Teaching Assistant - 数学基礎論特論 (Mathematical Logic — Graduate)
- 2021     Teaching Assistant - 計算機数学 A (Computability A)
- 2022     Teaching Assistant - 計算機数学 B (Computability B)

## Publications

L. Pacheco, W. Li, K. Tanaka *On one-variable fragments of modal  $\mu$ -calculus*, Proceedings of CTFM 2019, World Scientific Publications (2022), 17–45.

L. Pacheco, K. Tanaka, *On the degrees of ignorance: via epistemic logic and mu-calculus*, Proceedings of SOCREAL 2022: 6th International Workshop on Philosophy and Logic of Social Reality (2022), 74–78.

L. Pacheco, K. Tanaka, *The alternation hierarchy of the mu-calculus over weakly transitive frames*, Proceedings of WoLLIC 2022 – 28th Workshop on Logic, Language, Information and Computation, Lecture Notes in Computer Science, vol 12468, 107–220.

L. Pacheco, *Recent Results on Reflection Principles in Second-Order Arithmetic*, RIMS Kôkyûroku No.2228, 73–77.

L. Pacheco, K. Yokoyama, *Determinacy and reflection principles in second-order arithmetic*, preprint, [arXiv:2209.04082](https://arxiv.org/abs/2209.04082).

## Talks

- 2022 *The alternation hierarchy of the  $\mu$ -calculus over weakly transitive frames* at [28th Workshop on Logic, Language, Information and Computation](#).
- 2022 *Determinacy and reflection principles in second-order arithmetic* at [Workshop on Reverse Mathematics and its Philosophy](#), joint presentation with Keita Yokoyama.
- 2022 *Determinacy and reflection principles in second-order arithmetic* at [The second Japan-Russia workshop on effective descriptive set theory, computable analysis and automata](#).
- 2022 *On the degrees of ignorance: via epistemic logic and  $\mu$ -Calculus* at [SOCREAL 2022](#).
- 2021 *Sequences of  $\beta_k$ -models and reflection in second-order arithmetic* at [Theory and Applications of Proof and Computation — RIMS 共同研究（公開系）](#).
- 2021 *On the  $\mu$ -calculus between S4 and S5* at [1º Encontro de Logica Brasil-Colômbia](#).
- 2021 *Modal semantics for epistemic logic* at [数学基礎論若手の会 2021](#).
- 2020  *$\mu$ -calculus and Wadge Degrees* at [Proof Theory Workshop 2020](#).

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