

Herman Goulet-Ouellet

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Employment

- Postdoctoral researcher.** 2024–2025 (upcoming)
Czech Technical University, Czech Republic. Funded by the CTU Global Postdoc Fellowship program.
- Postdoctoral researcher.** 2023
IRIF, France. Funded by the Agence Nationale de Recherche through the CODYS project (ANR-18-CE40-0007).

Education

- PhD in Mathematics.** With highest praise (*com Distinção e Louvor*). 2022
University of Coimbra, Portugal. Advisors: Jorge Almeida and Alfredo Costa.
- Master in Mathematics.** With highest praise (*Excellent*). 2018
Université du Québec à Montréal, Canada. Advisor: Franco Saliola.
- Bachelor in Mathematics.** 2016
Université du Québec à Montréal, Canada.
- Diploma of College Studies in Computer science and mathematics.** 2013
Collège de Maisonneuve, Montreal, Canada.

Publications

- J. Almeida, H. Goulet-Ouellet, and O. Klíma. **What makes a Stone topological algebra profinite.** *Algebra Univers.*, vol. 84, no. 1 (2023).
doi: 10.1007/s00012-023-00804-w • arXiv: 2109.07286v1.
- V. Berthé and H. Goulet-Ouellet. **On substitutions preserving their return sets.** In: *Combinatorics on words, WORDS 2023*. Ed. by A. Frid and R. Mercas. vol. 13899. Lecture Notes in Computer Science. 2023.
doi: 10.1007/978-3-031-33180-0_6.
- H. Goulet-Ouellet. **Freeness of Schützenberger groups of primitive substitutions.** *Int. J. Algebra Comput.*, vol. 32, no. 06 (2022), pp. 1101–1123.
doi: 10.1142/S0218196722500473 • arXiv: 2109.11957v1.
- H. Goulet-Ouellet. **Pronilpotent quotients associated with primitive substitutions.** *J. Algebra*, vol. 606 (2022), pp. 341–370.
doi: 10.1016/j.jalgebra.2022.05.021 • arXiv: 2204.05706v1.
- H. Goulet-Ouellet. **Suffix-connected languages.** *Theoret. Comput. Sci.*, vol. 923 (2022), pp. 126–143.
doi: 10.1016/j.tcs.2022.05.001 • arXiv: 2106.00452v1.

Thesis

H. Goulet-Ouellet. **Schützenberger groups of minimal shift spaces**. Advisors: Jorge Almeida and Alfredo Costa. PhD thesis. Universidade de Coimbra, 2022.

Teaching experience

Teaching assistant. 2023 (ongoing)
Université Paris Cité. Object Oriented Programming, 48 h.

Mini course on profinite monoid and symbolic dynamics. 2023
IRIF, Paris. Duration: 6 h.

Teaching assistant. 2015–2018
Université du Québec à Montréal.

2018	MAT1260 Algèbre linéaire II (advanced linear algebra)	Teaching, grading and tutoring.	150 h
2017	MAT3005 Théorie des équations (theory of equations)	Teaching and grading.	108 h
2017	MAT1600 Algèbre matricielle (linear algebra)	Grading.	26 h
2016	MAT3005 Théorie des équations (theory of equations)	Teaching.	60 h
2015	MAT1600 Algèbre matricielle (linear algebra)	Grading.	21 h
2015	MAT1060 Math. algorithmiques (algorithmics)	Teaching, grading and tutoring.	150 h

Talks

Density of rational languages under invariant measures. Online. October 24, 2023
Seminar – One World Combinatorics on Words.

Obstructions to return preservation for episturmian morphisms. September 29, 2023
Seminar – Discrete Mathematics, ULiège, Belgium.

Monoïdes profinis et dynamique symbolique. August 25, 2023
Seminar – LACIM, UQAM, Canada.

Profinite approach to conjugacy of substitutive shifts. Invited speaker. July 5, 2023
Dyadisc 6, Amiens, France

On substitutions preserving their return sets. June 15, 2023
WORDS 2023, Umeå, Sweden

Forays beyond dendricity. May 26, 2023
Numeration 2023, Liège, Belgium.

What lies inside free profinite monoids. April 21, 2023
Seminar – Automata and applications, Université Paris Cité, France.

Pronilpotent quotients associated with primitive substitutions. September 5, 2022
18th Mons Theoretical Computer Science Days, Prague, Czech Republic.

A pronilpotent look at maximal subgroups of free profinite monoids. <i>Topology, Algebra, and Categories in Logic (TACL), Coimbra, Portugal.</i>	June 24, 2022
Freeness of Schützenberger groups of primitive substitutions. Online. <i>Seminar – Semigroups, automata and languages, University of Porto, Portugal.</i>	April 29, 2022
Suffix-connected languages. Online. <i>Encontro Nacional da Sociedade Portuguesa de Matemática, Portugal.</i>	July 12–16, 2021
Suffix-connected languages. Online. Poster. <i>Dyadisc4, Amiens, France.</i>	July 8–9, 2021

Awards

PhD scholarship. Duration: 4 years. <i>Fundação para a Ciência e a Tecnologia.</i>	2018 contest
Scholarship – 2nd cycle. Duration: 1 year. <i>Fonds de recherche du Québec – Nature et technologies.</i>	2017 contest
Alexander Graham Bell Canada Graduate Scholarships. Duration: 1 year. <i>Natural Sciences and Engineering Research Council of Canada.</i>	2016 contest
Undergraduate Student Research Award. Duration: 15 weeks. <i>Natural Sciences and Engineering Research Council of Canada.</i>	2014, 2015 and 2016 contests

Programming

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| • Python | • C++ | • SageMath | • LaTeX |
| • Haskell | • Java | • Git | • GAP |