Curriculum Vitae

Herman Goulet-Ouellet

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Employment

Postdoctoral researcher. 2024–2025 (ongoing)
CTU, Czech Republic. Funded by the CTU Global Postdoc Fellowship program. Collaboration with Štěpán Starosta.

Postdoctoral researcher. 2023
IRIF, France. Funded by the ANR CODYS project (ANR-18-CE40-0007). Collaboration with Valérie Berthé.

Education

PhD in Mathematics. With highest praise (*com Distinção e Louvor*). 2022
University of Coimbra, Portugal.
Advisors: Jorge Almeida and Alfredo Costa.
Thesis: Schützenberger groups of minimal shift spaces.

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 Universalis*, 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: *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. hal: hal-04311379.

Last update: December 26, 2023

H. Goulet-Ouellet. **Freeness of Schützenberger groups of primitive substitutions**. *International Journal of Algebra and Computations*, vol. 32, no. 06 (2022), pp. 1101–1123. doi: 10.1142/S0218196722500473. arXiv: 2109.11957v1.

H. Goulet-Ouellet. **Pronilpotent quotients associated with primitive substitutions**. *Journal of Algebra*, vol. 606 (2022), pp. 341–370. doi: 10.1016/j.jalgebra.2022.05.021. arXiv: 2204.05706v1.

H. Goulet-Ouellet. **Suffix-connected languages**. *Theoretical Computer Science*, vol. 923 (2022), pp. 126–143. doi: 10.1016/j.tcs.2022.05.001. arXiv: 2106.00452v1.

Teaching experience

Teaching assistant. 2023

Université Paris Cité. Object Oriented Programming in Java, 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.

Year	Topic	Responsabilities	Duration
2018	Advanced linear algebra	Teaching, grading	150 h
2017	Theory of equations	Teaching, grading	108 h
2017	Matrix algebra	Grading	26 h
2016	Theory of equations	Teaching	60 h
2015	Matrix algebra	Grading	21 h
2015	Algorithmics	Teaching, grading	150 h

Talks

Conferences

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.

Pronilpotent quotients associated with primitive substitutions. September 5, 2022

18th Mons Theoretical Computer Science Days, Prague, Czech Republic.

Last update: December 26, 2023

A pronilpotent look at maximal subgroups of free profinite monoids. June 24, 2022
Topology, Algebra, and Categories in Logic (TACL), Coimbra, Portugal.

Suffix-connected languages. Online. July 12–16, 2021
Encontro Nacional da Sociedade Portuguesa de Matemática, Portugal.

Suffix-connected languages. Online. Poster. July 8–9, 2021
Dyadisc4, Amiens, France.

Seminars

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

Obstructions to return preservation for episturmian morphisms. September 29, 2023
Discrete Mathematics seminar, ULiège, Beligum.

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

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

Freeness of Schützenberger groups of primitive substitutions. Online. April 29, 2022
Semigroups, automata and languages seminar, University of Porto, Portugal.

Awards

PhD scholarship. Duration: 4 years. 2018
Fundação para a Ciência e a Tecnologia.

Scholarship – 2nd cycle. Duration: 1 year. 2017
Fonds de recherche du Québec – Nature et technologies.

Alexander Graham Bell Canada Graduate Scholarships. Duration: 1 year. 2016
Natural Sciences and Engineering Research Council of Canada.

Undergraduate Student Research Award. Duration: 15 weeks. 2014, 2015 and 2016
Natural Sciences and Engineering Research Council of Canada.

Programming

- Python
- C++
- SageMath
- LaTeX
- Haskell
- Java
- Git
- GAP

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