David Wahiche

Curriculum Vitae

📱 *+33 (0) 647422251*
✉ *wahiche@math.univ-lyon1.fr*

PhD

Since the first of October 2019, I am a PhD student at University Claude Bernard Lyon 1 under the supervision of Frédéric Jouhet. My PhD thesis is entitled "*Integer partitions, modular forms, symmetric functions and representation theory*". Since October 2022 I am working as an "Attaché Temporaire d'Enseignement et de Recherche" (ATER) at Institut Universitaire de Technologie (IUT) of Lyon 1 University.

Publications, pre-publications and work in progress

- *Multiplication theorems for self-conjugate partitions*, David Wahiche, published in *Combinatorial Theory*, Volume 2, paper No. 13, 2022.
- *Multiplication theorems for self-conjugate partitions*, David Wahiche, extended abstract, accepted to be published *Formal Power Series and Algebraic Combinatorics*, 2022.
- *Combinatorial interpretations of the Macdonald identities for affine root systems*, David Wahiche, extended abstract submitted to *Formal Power Series and Algebraic Combinatorics*, 2023.

Education

10/2019– **PhD in mathematics**, Université Claude Bernard Lyon 1, France, Villeurbanne,

- **Subject:** "*Integer partitions, modular forms, symmetric functions and representation theory*", under the supervision of **Frédéric Jouhet**,

09/2017– **Graduate degree in Pure Mathematics**, Université Paris Diderot, Paris, 06/2019 France,

- **M2 thesis:** "*Some results around the Littlewood decomposition*", under the supervision of **Frédéric Jouhet,**
- **Main topics:** *Arithmetics, Algebraic Topology, Logic et complexity (M1), Combinatorics, Combinatorics of polytopes (M2),*

09/2009– **Graduate degree, option Data Science**, ENSAE Paristech, Malakoff, France. 06/2014

- **M2 Thesis:** "*Neural nets and optimization methods applied to image recognition*", under the supervision of Jérémie Jakubbowicz.
- **Project of applied statistics:** "*Optimization of portfolio strategies by minization of the regret*", under the supervision of Rida Laraki and Vianney Perchet.

09/2006– **Prepatory Classes(MPSI-MP*)**, Lycée Louis-Le-Grand, Paris, France. 06/2009

Teaching

PhD student working as an ATER (96 hours per year) at "Institut Universitaire de Technologie" (IUT) of Lyon 1. Previously I was given an "Activité Complémentaire d'Enseignement" (teaching assistant duty) at Lyon 1 University since October 2019 (196 hours of teaching in total over three years). Over the last three years, I was a teaching assistant mostly for algebra and analysis for students in bachelor math and physics at university but also was in charge of conducting "Khôlles" which are oral interrogations.

Talks and poster

- Journées Combinatoires de Bordeaux, Talence, France, Janvier-Février 2023, *TBA*.
- Formal Power Series Algebraic Combinatorics (FPSAC) (**poster**), Bangalore, July 2022, *Multiplication theorems for self-conjugate partitions*.
- Algorithmics and Enumerative Combinatorics, Vienna, July 2022, *A q-analogue of Nekrasov–Okounkov for type $\widetilde{C}$*.
- Séminaire Lotharingien de Combinatoire, Saint-Paul-en-Jarez, Avril 2022, *A q-analogue of Nekrasov–Okounkov for type $\widetilde{C}$*.
- Journées ALÉA, Marseille, Mars 2022, *Nouvelles propriétés de la décomposition de Littlewood et ses applications*.
- Journées de l'ANR Cominé, Bordeaux (visio), Février 2022, *Théorèmes de multiplication pour les partitions auto-conjuguées*.
- Journées GT CombAlg 2021, Strasbourg, Novembre 2021, *Théorèmes de multiplication pour les partitions auto-conjuguées*.
- Journée de l'équipe CTN de l'institut Camille Jordan, Villeurbanne, Octobre 2021,*Théorèmes de multiplication-addition pour les partitions auto-conjuguées*.
- Séminaire Lotharigien de Combinatoire, Septembre 2021, *Multiplication theorems for self-conjugate partitions*.

Conferences and schools

- Marches aléatoires, combinatoire et interactions, France, Juin 2021.
- Journées ALÉA , Marseille(visio), France, Mars 2021.
- Journées Combinatoires de Bordeaux, Talence, France, Février 2020.

Other activities

- **Private tutoring in mathematics:** For five years, I had around fifteen students from junior high to bachelor level.
- **Co-founder, Social Workshop (01/2011-12/2012) :** creation and development of concept and partnerships: creation of a competition on the development of projects in social and solidarity economy.

Professional experience

08/2017- **Machine learning applied to cybersecurity**, Liberal profession, Paris,
09/2019   France

- ○ **Design of predictive models:** *development in Python of engines of detection of cyber attacks.*
- ○ **Data science mission** *development of predictive tools like the volumetry of patients in emergency wards day by day.*

01/2016- **Asset manager and co-founder if S&A Absolute Return**, Futur Asset
01/2017 Management, Paris, France.

- ○ **Asset manager:** *in charge of order placements, of reporting to investors.*
- ○ **In charge of R&D:** *in charge of R&D strategy and of technical development of mathematical models and statistical learning.*

07/2014- **Co-founder de Slings & Arrows Capital**[1], Slings & Arrows Capital, Paris,
01/2017 France

- ○ **Co-founder:** *Founder of a company: administrative tasks, prospection, fundraising...,*
- ○ **In charge of R&D:** *in charge of R&D strategy and of technical development of mathematical models and statistical learning.*

Languages and computer skills

- ○ **English:** Fluent.
- ○ **German:** Beginner.
- ○ **Desktop applications:** Microsoft Excel, Word, Access, Powerpoint, LaTeX.
- ○ **Programming :** SageMath, Python, C++, SAS, Stata, R, MatLab, Scilab.

---

[1]Slings & Arrows Capital was a company of financiel advisory, based on statistical learning and deep learning, aiming at reinvesting a substantial part of its profits into projects of social and solidarity economy and in R&D.