

Employment

- 2021–2023 **Post-doctoral researcher in Mathematics**, Institut Camille Jordan, Université Claude Bernard Lyon 1, Advisor: Jehanne Dousse.
Post-doctoral grant of Milyon labex
- 2020–2021 **Visiting Assistant Professor**, Institut de Recherche en Informatique Fondamentale, Université de Paris.

Education

- 2017–2020 **Ph.D.**, Université de Paris, France, Advisor: Jeremy Lovejoy, Defense: 04/12/2020, Title: *Rogers-ramanujan type identities: bijective proofs and Lie-theoretic approach*.
Grant of École Doctorale de Sciences Mathématiques de Paris-Centre (ED 386)
- 2014–2016 **Master in Fundamental Mathematics**, Université Paris Saclay - (Paris Sud), France, Major: Arithmetics and Geometry.
Master grant of Fondation Mathématiques Jacques Hadamard
- 2012–2014 **Bachelor(Licence) in Fundamental Mathematics**, Université Paris Sud - Paris 11, France.

Research interests

- Combinatorics and Number Theory
- Integer partitions and q -series
 - Rogers-Ramanujan type identities
- Representation theory of Lie Algebras
- Statistical physics

Publications

Publication in journals

1. *A bijective proof and generalization of Siladić's theorem*, European Journal of Combinatorics, Volume 87, 2020, 103101.
2. *Beyond Göllnitz' theorem I: a bijective approach*, Journal of Combinatorial Theory series A, Volume 180, 2021, 105426.
3. *Weighed words at degree two, I: Bressoud's algorithm as an energy transfer*, to appear in Annales of IHP Series D, <https://arxiv.org/abs/2001.10927>.
4. *Weighed words degree two, II: flat partitions, regular partitions, and application to level one perfect crystals*, Electronic Journal of Combinatorics, Volume 29, 2022, P1.54.
5. *Multi-ground partitions and character formulas*, with J. Dousse Advances in Mathematics, Volume 400, 2022, 108275.
6. *The (k, l) -Euler theorem and the combinatorics of (k, l) -sequences*, European journal of Combinatorics, Volume 103, 2022, 103524.
7. *Beyond Göllnitz' theorem II: arbitrary many primary colors*, Journal of Combinatorial Theory series A, Volume 191, 2022, 105640.

Preprint and submitted

1. *Generalizations of Capparelli's and Primc's identities, I: colored Frobenius partitions and combinatorial proofs*, <https://arxiv.org/abs/1911.13191> with J. Dousse
2. *Generalizations of Capparelli's and Primc's identities, II: perfect $A_{n-1}^{(1)}$ crystals and explicit characters formulas*, <https://arxiv.org/abs/1911.13189> with J. Dousse
3. *Partitions identities for higher level crystals of $A_1^{(1)}$* , with J. Dousse and L. Hardiman, <https://arxiv.org/abs/2111.10279>.

4. *Bijjective proof of a generalization of the non-negative crank-odd mex identity*, <https://arxiv.org/abs/2203.04267>.

Publications in conference proceedings

- 2018 A bijective proof and generalization of Siladić's theorem (extended abstract), FPSAC 2018, <https://www.mat.univie.ac.at/~slc/wpapers/FPSAC2018/03-Konan.pdf>.
- 2020 Beyond Göllnitz' theorem I: a bijective approach, FPSAC 2020, <https://www.mat.univie.ac.at/~slc/wpapers/FPSAC2020/2-Konan.pdf>.
- 2022 Multigrounded-partitions and character formulas, FPSAC 2022.

Talks

- 2022 FPSAC 2022, Indian Institute of Science, Bangalore, India.
- 2022 Online Partition Seminar.
- 2022 Seminaire Lotharingien de Combinatoirer 87, Saint-Paul-en-Jarez, France
- 2021 Combinatorics and Number theory Seminar, ICJ, Villeurbanne, France
- 2020 FPSAC online.
- 2020 Plateau Saclay Combinarics seminar, LIX, Palaiseau, France.
- 2019 Combinarics seminar, UC Berkeley, Berkeley, USA.
- 2019 Combinarics and Interactions seminar, IHP, Paris, France.
- 2019 ALEA days 2019, CIRM, Marseille, France.
- 2018 Enumerative and analytic Combinatorics Seminar, IRIF, Paris, France.
- 2018 Algorithmic and Enumerative Combinatorics Summer School 2018, Johannes Kepler University Linz, Hagenberg, Austria.
- 2018 FPSAC 2018, Dartmouth College, Hanover, USA.
- 2018 School of young researchers in Number Theory, University of Franche-Comté, Besançon, France.
- 2018 Algebra, arithmetics and combinatorics of Differential and Difference Equations, CIRM, Marseille, France.
- 2018 ALEA days 2018, CIRM, Marseille, France.
- 2017 Phd students' seminar, IRIF, France.

Research visits

- Jan 2020 Mathematics department, Berkeley, USA.
Supervisor: Jeremy Lovejoy
- Jan 2020 Institut Camille Jordan, Lyon, France.
Collaborator: Jehanne Dousse
- Dec 2019 Mathematics department, Berkeley, USA.
Supervisor: Jeremy Lovejoy
- May 2019 Institut Camille Jordan, Lyon, France.
Collaborator: Jehanne Dousse
- April-May 2019 Mathematics department, Berkeley, USA.
Supervisor: Jeremy Lovejoy
- March–July 2016 Research internship supervised by Jeremy Lovejoy, LIAFA, Université Paris Diderot: *Autour des q -series, des formes modulaires quantiques et des nœuds toriques*

Teaching

- 2020–2021 Teaching assistant, Université Paris de Paris: *Algorithm and Complexity* (graduate course).
- 2020–2021 Teaching assistant, Université Paris de Paris: *Analysis and algebra* (undergraduate course).
- 2019–2020 Teaching assistant, Université Paris Diderot: *Projects in Mathematics* (undergraduate course).
- 2019–2020 Teaching assistant, Université Paris Diderot: *Elementary Analysis* (undergraduate course).
- 2018–2019 Teaching assistant, Université Paris Diderot: *Introduction to Arithmetics* (undergraduate course).
- 2018–2019 Teaching assistant, École d'Ingénieur Denis Diderot: *Engineering Mathematics* (undergraduate course).

2017–2018 Teaching assistant, Université Paris Diderot: *Advanced Analysis and Algebra* (undergraduate course).

References

Jeremy Lovejoy, CR CNRS, University of Paris, lovejoy@math.cnrs.fr

Frédérique Bassino, PR, University of Paris-Nord, frederique.bassino@lipn.univ-paris13.fr

Vlady Ravelomanana, PR, University of Paris, vlad@irif.fr

Frédéric Bourgeois, PR, University of Paris Saclay, frederic.bourgeois@universite-paris-saclay.fr

Jehanne Dousse, CR CNRS, University of Lyon 1, dousse@math.cnrs.fr

Other professional activities

- Jury member for the Orsay marathon of mathematics since 2018.
- Animatheur for Club Animath project in Côte d'Ivoire.
- Referee for Journal of Combinatorial Theory Series A, European Journal of Combinatorics, Electronic Journal of Combinatorics, International Journal of Number Theory, Discrete Mathematics, Algebraic Journal of Combinatorics, Turkish Journal of Mathematics.
- Reviewer for American Mathematical Society

Languages

French Native speaker

English Advanced

Awards

Silver medallist, International Mathematics Olympiads (Astana 2010)

Gold medallist, Panafrican Mathematics Olympiads (Yamoussoukro 2010 and Pretoria 2009).