

Kevin Iván Piterman - Curriculum Vitae

Personal Information

Date and place of birth	January 25, 1992, City of Buenos Aires, Argentina
Current Position	Postdoctoral researcher at Vrije Universiteit Brussel (Belgium)
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Education

10/2016 – 12/2019	Ph.D. in Mathematics (University of Buenos Aires). Thesis: “Homotopy properties of the p -subgroup complexes”. Advisor: Prof. E. G. Minian. Final qualification: outstanding.
03/2012 – 06/2016	Master's in Mathematics (University of Buenos Aires). Thesis: “ <i>El tipo homotópico de los posets de p-subgrupos</i> ” ¹ . Advisor: Prof. E. G. Minian. Final qualification: 10 over 10.

Positions

07/2024 – 06/2027	Postdoctoral researcher at Vrije Universiteit Brussel (Belgium). Host: Prof. L. Vendramin.
05/2022 – 06/2024	Postdoctoral researcher at Philipps-Universität Marburg (Germany). Host: Prof. V. Welker.
12/2019 – 04/2022	Postdoctoral researcher at the University of Buenos Aires (Argentina). Host: Prof. E. G. Minian.
10/2016 – 12/2019	PhD candidate at the University of Buenos Aires (Argentina). Advisor: Prof. E. G. Minian.

Fellowships and awards

07/2024 – 06/2027	FWO Junior Postdoctoral Fellowship. Awarded by FWO (Research Foundation - Flanders), Belgium.
05/2022 – 06/2024	Alexander von Humboldt Research Fellowship for postdocs. Awarded by the Alexander von Humboldt Foundation, Germany.
04/2020 – 04/2022	CONICET Postdoctoral Fellowship. Awarded by CONICET (National Scientific and Technical Research Council), Argentina.
04/2017 – 03/2020	CONICET Doctoral Fellowship. Awarded by CONICET, Argentina.

¹ The homotopy type of the p -subgroup posets.

Other awards, fellowships, and grants

- 1) **FWO travel grant.** Obtained in May 2024 for a research stay in Buenos Aires (July 8-19, 2024), hosted by Profs. J. A. Barmak and E. G. Minian. Approximately 2000 € (792 € plus airplane ticket cost).
- 2) **FWO bench fee.** Obtained as part of the FWO Junior Postdoctoral Fellowship (3 years, from July 2024 to June 2027). 12.000 €.
- 3) **Humboldt's subsidy towards research costs.** Granted by the Alexander von Humboldt Foundation as part of the Humboldt Fellowship program (24 months, from July 2022 to June 2024). 19.200 €.
- 4) **Heidelberg Laureate Forum.** SAP grant awarded to attend the 9th Heidelberg Laureate Forum.
- 5) **Max-Planck Institute for Mathematics (Bonn).** Obtained in June 2021 for a postdoc position at the MPIM of Bonn from June 1st, 2022, to May 31st, 2023. Declined for incompatibility with the Humboldt Fellowship awarded shortly after.
- 6) **Junior Fellowship Program.** Obtained in April 2021 to attend the research program "Higher Algebraic Structures in Algebra, Topology and Geometry", at the Institut Mittag-Leffler (January 14- April 29, 2022). 20.000 SEK per month plus accommodation and full coverage of travel expenses (between Buenos Aires and Institut Mittag Leffler).
- 7) **Oberwolfach Leibniz Fellowship.** Obtained in April 2021 for a second research stay at MFO (August 22-November 11, 2021). Monthly allowance (4.385,28 € gross) plus accommodation, meals and full coverage of travel expenses (between Buenos Aires and Oberwolfach).
- 8) **Oberwolfach Leibniz Fellowship.** Obtained in May 2020 for a research stay at MFO, Germany (January 30- April 24, 2021). Accommodation, meals and full coverage of travel expenses (between Buenos Aires and Oberwolfach).
- 9) **UMALCA Travel Grant.** Obtained in July 2018 to attend the XXI Brazilian Topology Meeting (Brazil). Full coverage of travel expenses (approx. 415 USD).

List of publications in peer-reviewed journals

- 1) (with V. Welker) Posets arising from decompositions of objects in a monoidal category. Forum Math. Sigma. Accepted (2025). [arXiv:2208.12626](https://arxiv.org/abs/2208.12626).
- 2) Spherical p-group complexes arising from finite groups of Lie type. Algebr. Geom. Topol. In press (2025). [arXiv:2403.07489](https://arxiv.org/abs/2403.07489).
- 3) (with B. Brück and V. Welker) The Common Basis Complex and the Partial Decomposition Poset. Int. Math. Res. Not. IMRN **2024**, no. 18, 12746–12760.
- 4) (with S. D. Smith) Some results on Quillen's conjecture via equivalent-poset techniques. J. Comb. Algebra (2024). [doi 10.4171/jca/95](https://doi.org/10.4171/jca/95).
- 5) (with V. Welker) Homotopy properties of the complex of frames of a unitary space. J. London Math. Soc. **110** (2024), e:12978.

- 6) Maximal subgroups of exceptional groups and Quillen's dimension. *Algebra Number Theory* **18** (2024), no. 7, 1375–1401.
- 7) On the frame complex of symplectic spaces. *J. Algebra* **642** (2024), 65–94.
- 8) (with S. D. Smith) Eliminating components in Quillen's conjecture. *J. Algebra* **607**, Part A (2022), pp. 681–732.
- 9) An approach to Quillen's conjecture via centralisers of simple groups. *Forum Math. Sigma* **9** (2021), Paper No. e48, 23 pp.
- 10) (with E. G. Minian) The fundamental group of the p-subgroup complex. *J. London Math. Soc. (2)* **103** (2021), pp. 449–469.
- 11) (with I. Sadofschi Costa and A. Viruel) Acyclic 2-dimensional complexes and Quillen's conjecture. *Publ. Mat.* **65** (2021), no. 1, pp. 129–140.
- 12) A stronger reformulation of Webb's conjecture in terms of finite topological spaces. *J. Algebra* **527** (2019), pp. 280–305.
- 13) (with E. G. Minian) The homotopy types of the posets of p-subgroups of a finite group. *Adv. Math.* **328** (2018), pp. 1217–1233.

Preprints (submitted)

- 1) (with B. Brück) Connectivity of partial basis complexes of freely decomposable groups (2024). [arXiv:2410.17121](https://arxiv.org/abs/2410.17121).
- 2) (with I. Sadofschi Costa) Group actions on contractible 2-complexes II (2021). [arXiv:2102.11459](https://arxiv.org/abs/2102.11459).

Books

- 3) (with L. Vendramin) *Algebra with GAP*. Submitted (2023).
Oberwolfach preprint available at <https://publications.mfo.de/handle/mfo/4023>.

Mathematical Notes

- 4) (with E. G. Minian) *Notas de topología diferencial. Cursos y Seminarios de Matemática, Fascículo 12²* (UBA). ISSN 1851-1481. Available at:
<http://cms.dm.uba.ar/depto/public/serieB/serieB12.pdf>

Software

- 1) **Posets** (with X. Fernández and I. Sadofschi Costa) GAP package for computations related to posets and finite topological spaces.
Available at: <https://github.com/isadofschi/posets>.
- 2) **FASTPASC - From Algebraic Structures To Posets And Simplicial Complexes**.
GAP package for computation of p-subgroup posets, decomposition posets, frame complexes, and more. Available at: <https://github.com/kpiterman/FASTPASC>.

² Notes on differential topology. Mathematical Courses and Seminars, Fascicle 12.

Seminar talks (selected)

- 1) Topology Seminar, University of Buenos Aires, July 2025.
- 2) KU Leuven, May 2025.
- 3) University of Minnesota Twin Cities, May 2025.
- 4) Washington University in St Louis, April 2025.
- 5) Purdue University, April 2025.
- 6) Rutgers University, April 2025.
- 7) Algebra Seminar at the University of Ghent, December 2024.
- 8) Topology Seminar, University of Buenos Aires, July 2024.
- 9) Oberseminar at Münster University, April 2024.
- 10) Groups and Operator Algebras Seminar, University of Copenhagen, March 2024.
- 11) Oberseminar Geometrie, Topologie. Justus Liebig University Giessen, January 2024.
- 12) University of Málaga, September 2023.
- 13) KTH, April 2023.
- 14) Séminaire de Topologie Algébrique, Univ. Sorbonne Paris Nord, March 2022.
- 15) Institut Mittag-Leffler, January 2022.

Conference talks (selected)

- 1) Oberwolfach Workshop “Finite groups, fusion systems and applications” **(invited)**, March 2025.
- 2) XXIV Coloquio Latinoamericano de Álgebra **(invited)**, July 2024.
- 3) BIRS Workshop “Skew Braces, Braids and the Yang-Baxter Equation” **(invited)**, May 2024.
- 4) Oberwolfach Workshop “Geometric, Algebraic, and Topological Combinatorics” **(invited)**, December 2023.
- 5) Northern Group Theory conference in honour of Bernd Fischer, Bielefeld Universität **(invited)**, September 2023.
- 6) Group, rings and the Yang-Baxter equation 2023, Blankenberge, June 2023.
- 7) II Encuentro RSME-UMA, Ronda **(invited)**, December 2022.
- 8) Simple groups, representation and applications. Isaac Newton Institute, University of Cambridge, July 2022.

Research stays

28/04/2025 – 02/05/2025	University of Minnesota Twin Cities (Hosts: Vic Reiner and Peter Webb).
21/04/2025 – 25/04/2025	Washington University in St. Louis (Host: John Shareshian).
24/03/2025 – 28/03/2025	RPTU Kaiserslautern-Landau (Hosts: Gunter Malle and Damiano Rossi).
08/07/2024 – 19/07/2024	University of Buenos Aires (Host: Jonathan Barmak and Gabriel Minian).
16/10/2023 – 21/10/2023	Vrije Universiteit Brussel (Host: Leandro Vendramin).

11/09/2023 – 15/09/2023	University of Málaga (Host: Antonio Viruel).
19/02/2023 – 04/03/2023	Research in pairs at MFO with Leandro Vendramin.
04/09/2022 – 16/09/2022	Research in pairs at CIRM with Leandro Vendramin.
12/01/2022 – 30/04/2022	Junior postdoctoral researcher at Institut Mittag-Leffler.
22/08/2021 – 13/11/2021	Oberwolfach Leibniz Fellow at MFO.
30/01/2021 – 30/04/2021	Oberwolfach Leibniz Fellow at MFO.
29/05/2018 – 22/06/2018	University of Málaga (Host: Aniceto Murillo and Antonio Viruel).

Participation in research projects

- 1) 2024-2027. FWO Senior Grant (G004124N), “Skew braces and applications”. PI: L. Vendramin. 310.000 €.
- 2) 2023-2026. FWO-CNRS: Cooperation between Belgium and France. PIs: V. Lebed, L. Vendramin. 12.000 €.
- 3) 2021-2025. OZR3762 “Algebraic structures associated with the Yang-Baxter equation”. PI: L. Vendramin. 100.000 €.
- 4) PICT-2019-02338 “Topology and combinatoric and geometric group theory”. PI: E. G. Minian.
- 5) UBACyT 2020 20020190100099BA “Algebraic topology and geometric and combinatorial group theory”. PI: E. G. Minian.
- 6) PIP 2017-2019 11220170100357CO “Algebraic topology and applications”. PI: E. G. Minian.
- 7) UBACyT 2017 20020160100081BA “Homotopy theory and geometric group theory”. PI: E. G. Minian.
- 8) PICT-2017-2997 “Algebraic topology and applications”. PI: E. G. Minian.

Organisation of activities

- 1) Algebra Seminar at VUB (since September 2024).
- 2) Local organiser of “Groups, rings and the Yang-Baxter equation 2023”, taking place in Blankenberge, from 19-23 June 2023. <https://www.ilariacolazzo.info/gryb2023/>.
- 3) (with J.M. Cantarero López) Organiser of special session “Grupos y topología” at the II Encuentro RSME-UMA, taking place in Ronda, 12-16 December 2022. <http://www.rsmeuma2022.uma.es/index.php/sesiones-especiales/>.

Participation in workshops (selected)

- 1) “Finite groups, fusion systems and applications”, MFO, March 2025.
- 2) “Skew Braces, Braids and the Yang-Baxter Equation”, BIRS, May 2024.
- 3) “Geometric, Algebraic, and Topological Combinatorics”, MFO, December 2023.
- 4) “Skew Braces and the Yang-Baxter equation”, MFO, February 2023.
- 5) “The algebra of the Yang-Baxter equation”, Będlewo, July 2022.

- 6) “Higher Algebraic Structures in Algebra, Topology and Geometry”, Institut Mittag-Leffler, January – April 2022.

PhD mentoring

- 1) Charlotte Roelants. PhD supervisor, jointly with Prof. Vendramin, at Vrije Universiteit Brussel since September 2024.

Undergraduate mentoring

- 1) Nina Saydeux, “Combinatorial invariants of knots”. Bachelor thesis supervisor at Vrije Universiteit Brussel, January 2025.

Minicourses

- 1) Exercise session of “Introduction to GAP”, GAP Days Spring 2025.

Teaching experience

09/2025 – 01/2026	Instructor. At the Department of Mathematics and Data Science, VUB.
03/2020 – 07/2022	<i>Jefe de Trabajos Prácticos</i> (“Lead” Teaching Assistant/Instructor). At the Department of Mathematics, FCEN – UBA.
03/2017 – 02/2020	<i>Ayudante de Primera</i> (Teaching Assistant). At the Department of Mathematics, FCEN – UBA.
04/2015 – 02/2017	<i>Ayudante de Segunda</i> (Undergraduate Teaching Assistant). At the Department of Mathematics, FCEN – UBA.

The following table shows detailed information about my teaching experience.

Course	Students	Semester	Position	Total load
Rings and Module Theory	Mathematics	Fall 2025	Instructor	26 hours
Numerical Methods	Biology	March - July 2022	Lead TA	96 hours
Calculus I	Mathematics, Physics, Computer Science, Chemistry	August - December 2021	Lead TA	96 hours
Topology	Mathematics	August - December 2020	Lead TA	96 hours
Probability and Statistics	Computer Science, Physics	March - July 2020	Lead TA	96 hours

Calculus II	Mathematics, Physics, Computer Science, Chemistry	August - December 2019	TA	96 hours
Probability and Statistics	Computer Science, Physics	March - July 2019	TA	96 hours
Topology	Mathematics	August - December 2018	TA	96 hours
Differential Geometry	Mathematics	March - July 2018	TA	96 hours
Advanced Calculus	Mathematics	August - December 2017	TA	96 hours
Calculus II	Mathematics, Physics, Computer Science, Chemistry	March - July 2017	TA	96 hours
Topology	Mathematics	August - December 2017	Undergraduate TA	96 hours
Linear Algebra	Physics	March - July 2016	Undergraduate TA	96 hours
Calculus II	Mathematics, Physics, Computer Science, Chemistry	August - December 2015	Undergraduate TA	96 hours
Probability and Statistics	Computer Science, Physics	March - July 2015	Undergraduate TA	96 hours

Languages

1. Spanish (native).
2. English (advanced).
3. German (basic).
4. French (basic).
5. Italian (basic).