Juliana Cunha

Ph.D. Candidate | Mathematics Department | University of Aveiro

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Ciência Vitae: 9D1E-9BD4-3F9E **ORCID:** 0009-0002-5385-9858

Research Interests: Paraconsistent Logic · Formal Methods · Algebraic Semantics · Twist Structures

Education

Doctorate in Mathematics · *University of Aveiro* Set. 2023 - Present

- Dissertation: "Parametric Paraconsistent Systems and Their Logics"
- Advisors: Alexandre Madeira & Luís S. Barbosa

Master in Mathematics and Applications· *University of Aveiro* Set. 2020 - Feb. 2023

- Computing and Informatics Minor
- Thesis: "Towards a Specification Theory for Paraconsistent Transition Systems"
- Advisors: Alexandre Madeira & Luís S. Barbosa

Bachelor in Mathematics· *Faculty of Sciences - University of Porto* Set. 2017 - Jul. 2020

Publications

[1] R. Alves, J. Cunha, and A. Madeira. "First Steps in a Paraconsistent Transition Systems Toolkit". In: *Theoretical Aspects of Software Engineering - 20th International Symposium, TASE 2026, Shanghai, China, July 4-6, 2026, Proceedings*. Ed. by G. D. Giacomo, J. Li, and L. Xiao. Vol. 16697. Lecture Notes in Computer Science. Springer, 2026, pp. 368–385. DOI: 10.1007/978-3-032-30693-7_24.

[2] J. Cunha, A. Madeira, and L. S. Barbosa. "Paraconsistent Reactive Graphs: Their Semantics and Conflict Resolution Policies". In: *Journal of Applied Logics – IfCoLog Journal* 13.4 (Aug. 2026). Special Issue: Reconfigurable Transition Systems – ReacTS 2024. Guest Editors: Raul Fervari and Manuel A. Martins, pp. 507–554. ISSN: 2631-9810. URL: https://www.collegepublications.co.uk/downloads/ifcolog00079.pdf.

[3] J. Cunha, A. Madeira, and L. S. Barbosa. "Paraconsistent transition structures: compositional principles and a modal logic". In: *Mathematical Structures in Computer Science* 35 (2025), e14. DOI: 10.1017/S0960129525100170.

[4] J. Cunha, A. Madeira, and L. S. Barbosa. "Specification of paraconsistent transition systems, revisited". In: *Science of Computer Programming* 240 (2025), pp. 103–196. DOI: 10.1016/J.SCICO.2024.103196.

[5] J. Cunha, A. Madeira, and L. S. Barbosa. "Paraconsistent Relations as a Variant of Kleene Algebras". In: *Electronic Proceedings in Theoretical Computer Science* 421 (2025), pp. 130–147. ISSN: 2075-2180. DOI: 10.4204/eptcs.421.8.

[6] J. Cunha, A. Madeira, and L. S. Barbosa. "Paraconsistent Reactive Graphs". In: *Software Engineering and Formal Methods. SEFM 2024 Collocated Workshops - ReacTS 2024 and CIFMA 2024, Aveiro, Portugal, November 4-5, 2024, Revised Selected Papers*. Ed. by J. Proença, R. Fervari, M. A. Martins, R. Kahle, and G. Pluck. Vol. 15551. Lecture Notes in Computer Science. Springer, 2024, pp. 105–111. DOI: 10.1007/978-3-031-94748-3_9.

[7] J. Cunha, A. Madeira, and L. S. Barbosa. “Stepwise Development of Paraconsistent Processes”. In: *Theoretical Aspects of Software Engineering*. Ed. by C. David and M. Sun. Cham: Springer Nature Switzerland, 2023, pp. 327–343. ISBN: 978-3-031-35257-7.

[8] J. Cunha, A. Madeira, and L. S. Barbosa. “Structured Specification of Paraconsistent Transition Systems”. In: *Fundamentals of Software Engineering - 10th International Conference, FSEN 2023, Tehran, Iran, May 4-5, 2023, Revised Selected Papers*. Ed. by H. Hojjat and E. Ábrahám. Vol. 14155. Lecture Notes in Computer Science. Springer, 2023, pp. 1–17. DOI: 10.1007/978-3-031-42441-0_1.

Grants and Research Projects

- **Collaborator in project Banksy** | INESCTEC | AIBILI | CIDMA — 2025 - 2029
  Reference COMPETE2030-FEDER-00892000
- **PhD FCT Grant** | INESCTEC | CIDMA | Reference 2024.04652.BD — 2025 - 2029
- **Collaborator in project Ibex** | INESCTEC | CISTER — 2023 - 2025
  Reference 10.54499/PTDC/CCI-COM/4280/2021
- **PhD PRR Grant** | CIDMA | Agenda ILLIANCE — 2023 - 2024

Teaching

- **Linear Algebra and Analytical Geometry** — University of Aveiro
  BSc in Economics (9081) — 2026/2027
- **Linear Algebra and Analytical Geometry** — University of Aveiro
  BSc in Economics (9081) — 2025/2026
- **Linear Algebra and Analytical Geometry** — University of Aveiro
  BSc in Computer and Informatics Engineering (8316) — 2024/2025
- **Linear Algebra and Analytical Geometry** — University of Aveiro
  BSc in Informatics Engineering (9119) — 2023/2024

Talks

- **20th Theoretical Aspects of Software Engineering Conference** – (TASE26) — Jul. 6, 2026
  Dishui Lake International Software Institute — China
- **Days in Logic 2026** — Jan. 29, 2026
  University of Minho — Portugal
- **4th Women in Mathematics Meeting in Portugal** – (WM25) — Jul. 16, 2025
  Faculty of Sciences of the University of Porto — Portugal
- **Quantitative Principles of Cyber-Physical Systems** – (SEFM Workshop) — Nov. 4, 2024
  University of Aveiro — Portugal
- **International Workshop on Reconfigurable Transition Systems** – (ReacTs24) — Nov. 5, 2024
  University of Aveiro — Portugal
- **19th International Workshop on Logical and Semantic Frameworks, with Applications** – (LSFA24), Universidade Federal de Goiás — Sep. 19, 2024
  Brazil
- **Days in Logic 2024** — Feb. 1, 2024
  Técnico ULisboa — Portugal
- **17th Theoretical Aspects of Software Engineering Conference** – (TASE23) — Jul. 4, 2023
  University of Bristol — United Kingdom

- **10th IPM International Conference on. Fundamentals of Software Engineering** – (FSEN23), Institute for Research in Fundamental Sciences — May 4, 2023, Iran
- **World Logic Day in Aveiro** — Jan. 17, 2023
  University of Aveiro — Portugal

Invited Talks

- **CMUC Seminar of the Algebra, Logic and Topology Group** — Dec. 16, 2025
  University of Coimbra — Portugal

Academic Service

(External) Conference Reviewer: LSFA26 and NCL26.

Organizing Committees:

- Chair at the **5th Annual Meeting of DMat-UA PhD Students** — Oct. 24, 2025
- Local Organizer of the **22nd International Conference on Software Engineering and Formal Methods** – (SEFM24) — Nov. 4-8, 2024
- Chair at the **4th Annual Meeting of DMat-UA PhD Students** — Oct. 25, 2024

Industry Experience

Marketing Operations Delivery — Jul. 2021 - Jul. 2022
Sonae MC | Porto, Portugal

- Responsible for documenting processes and training team members to execute communication campaigns in Salesforce Marketing Cloud.

Language

Portuguese (Native); **English** (Fluent); German (Beginner)

Last updated in November 4, 2026