

JUAN M. DURÁN

PERSONAL INFORMATION

<i>e-Mail</i>	j.m.duran@tudelft.nl
<i>Website</i>	juanmduran.net
<i>Affiliation</i>	Faculty of Technology, Policy and Management - Delft University of Technology
<i>AOS:</i>	Philosophy of Science - Epistemology - Philosophy of Computer Science - Data Science - Ethics of Technology - Computer Ethics
<i>AOC:</i>	History of Science and Technology - History and Philosophy of Technology - Philosophy of Medicine - Philosophy of Mathematics - Logic and Critical Thinking

EMPLOYMENT

<i>Aug. 2019 –</i>	<i>Assistant Professor - Tenured - Delft University of Technology - Faculty of Technology, Policy and Management</i>
<i>Aug. 2019</i>	<i>Junior-Professor - Ruhr-Universität Bochum. Tenure Track Position declined to take up Assistant Professorship at TU Delft.</i>
<i>Sep. 2018 – Jul. 2019</i>	<i>Lecturer - Full time - Delft University of Technology - Faculty of Technology, Policy and Management</i>
<i>Feb. 2016 – Aug. 2018</i>	<i>Research associate - University of Stuttgart - HLRS - Department of Philosophy of Science & Technology of Computer Simulation ¹</i>
<i>2014 – 2016</i>	<i>Postdoc - Universidad Nacional de Córdoba (UNC) - Argentina</i>
<i>2009 – 2012</i>	<i>Junior research associate - University of Stuttgart - Stuttgart Research Centre for Simulation Technology and Cluster of Excellence (SRC-SimTech) ²</i>
<i>2008 – 2009</i>	<i>Assistant Professor - College “Simón Bolívar” - Argentina</i>
<i>2008 – 2009</i>	<i>Adjunct Professor - Faculty of Psychology - UNC - Argentina</i>

EDUCATION

<i>2014 – 2016</i>	<i>Post-doc - UNC - National Scientific and Technical Research Council (CONICET) - Argentina Project: A philosophical study on the explanatory power of computer simulations</i>
<i>2009 – 2013</i>	<i>PhD. Philosophy - Excellence Initiative - SRC-SimTech - University of Stuttgart - Germany Thesis: Explaining simulated phenomena. A defense of the epistemic power of computer simulations.</i>
<i>2008</i>	<i>PhD. candidate Philosophy - UNC - Argentina ³</i>

¹ Funded by the Ministerium für Wissenschaft, Forschung und Kunst Baden-Württemberg (MWK)

² Funded by the Deutsche Forschungsgemeinschaft (DFG).

³ Withdrawn in favor of the Ph.D. position at SRC-SimTech.

- 2003 – 2007 *Licenciado philosophy* - Facultad de Filosofía y Humanidades (FFyH) - UNC - Argentina ⁴
Thesis: *Modelos científicos y simulaciones computacionales*
- 2002 – 2003 *Research student*. National Space Activities Commission (CONAE). Gulich Institute, Argentina
- 1998 – 2002 *B.Sc. Computer science* - UNC - Argentina

AWARDS

- 2019 *Herbert A. Simon Award* for outstanding research in Computing and Philosophy - International Association for Computing And Philosophy (IACAP). This award recognizes scholars at an early stage of their academic career who are likely to reshape debates at the nexus of Computing and Philosophy by their original research.
- 2007 *University Award 2007* - First Class Honors - School of Philosophy - UNC - GPA: 9.28/10

FELLOWSHIPS

- Sep 2020 – Dec 2020 *Senior fellow - Themes Group* - Nederlands Institute for Advanced Study in the Humanities and Social Sciences. Project: *Accountability in medical autonomous expert systems: ethical and epistemological challenges for explainable AI*. JMD as P.I. Collaborators: Giuseppe Primiero (University of Milan), Martin Sand (TU Delft), Karin Jongsma (University Medical Center Utrecht) and Sander Beckers (Munich Center for Mathematical Philosophy). 10,000+ €.
- May 2015 – Nov. 2015 *Senior fellow* - Institute for Philosophy - University of Duisburg-Essen - Dr. Raphael van Riel.
- Feb. 2012 – May 2012 *Junior fellow* - Tilburg Center for Logic and Philosophy of Science - Tilburg University - Prof. Dr. Stephan Hartmann, Prof. Dr. Jan Sprenger.
- Sep. 2010 – March 2011 *Visiting scholar* - Department of Philosophy - University of Virginia - Prof. Dr. Paul Humphreys
- Oct. 2001 – May 2002 *Visiting scholar* - Department of computer science - Asociación de Universidades “Grupo Montevideo” - Universidade Federal do Paraná - Brazil.

GRANTS

Research grants awarded

- ESFRI Dutch Node 2022 – 2050 *Dutch Node - SoBigData-ESFRI RoadMap 2021*. Creation of a Dutch Node for the SoBigData-ESFRI Research Infrastructure. The Dutch Node includes several Dutch universities and Institutions (including ODISSEI).
- 2020 *Subsidio Milstein* - Ministerio de Ciencia, Tecnología e Innovación Productiva - RAICES - Argentina.
- Horizon 2020 2020-2024 *HumaneAI* - Participation: *Ethics in design: methods and tools for the responsible development of AI systems*. Consortium with 50+ members from Academia, NGOs, and Industry. ca. 220K €/12M €.
- Horizon 2020 2020-2024 *SoBigData++* Group Leader: WP2 - Critical data literacy, Ethics and Legal Framework for Machine Learning and Artificial Intelligence. Consortium with 15+ members from Academia, NGOs, and Industry. ca. 270K €/10M €.

⁴ The “Licenciatura” degree represents 5 years of study with dissertation. In Germany it is equivalent to both, a B.A. and an M.A. combined.

- EOSCsecretariat
Horizon 2020
2020-2021
- Making Dark Data FAIR JMD as P.I. The project will study the ethics, epistemology and policy making of data in HPC facilities. The consortium includes TU Delft (prof. Kees Vuik), University of Exeter (prof. Sabina Leonelli), University of Stuttgart (prof Michael Resch), and University of Pisa-SoBigData++ (prof. Fosca Giannotti). ca. 40,000€.
- Sep 2020 –
Dec 2020
see fellowship
- Nederlands Institute for Advanced Study in the Humanities and Social Sciences. Project: *Accountability in medical autonomous expert systems: ethical and epistemological challenges for explainable AI*. JMD as P.I. Collaborators: Giuseppe Primiero (University of Milan), Martin Sand (TU Delft), Karin Jongsma (University Medical Center Utrecht) and Sander Beckers (Munich Center for Mathematical Philosophy). 10,000+ €.
- 2015 – 2017
P.I.
- Filosofía de la explicación científica*. with Manuel Barrantes, M.A. (University of Virginia, USA) - CIFYH, UNC, Argentina. US\$: 1,000
- May 2015 –
Nov. 2015
- A theory of explanation for computer simulations*
Institute for Philosophy - University of Duisburg-Essen. 400 €,
National Scientific and Technical Research Council (Argentina) 8,000 €.
- Feb. 2012 –
May 2012
- The use of computer simulations as evidence and explanation of phenomena*
Tilburg Center for Logic and Philosophy of Science - Tilburg University - International call for two Junior Fellowships (2 positions - 50 applicants).

Research grants in preparation

- NWO - VIDI
- Computational reliabilism: conditions for epistemic and moral trustworthy medical AI*. This project eschews trustworthy AI *qua* surveyability of the algorithm (as proposed by Transparency) and proposes trustworthy AI *qua* justification of belief. It then advances computational reliabilism as the most adequate framework to this end. Finally, it makes use of the results to understand cases of epistemic injustice in medical AI for cancer detection and treatment, and promote responsible research and innovation in AI for drug discovery and development.

Study grants

- 2014 – 2016
- Postdoctoral research grant - CONICET - UNC - ca. US\$: 40,000
- 2009 – 2014
- Doctoral research grant - CONICET - UNC - ca. US\$: 65,000
Declined to take up junior research associate position at SRC-SimTech
- 2008 – 2009
- Doctoral research grant - Secretaría de Ciencia y Tecnología (SECyT) - UNC - ca. US\$: 7,000

PUBLICATIONS

Peer-reviewed articles

- forthcoming
29. Pozzi, G. **Durán, JM** "Ethics" in Comandé, G. *Encyclopaedia of Law and Data Science*, Edward Elgar Publishing
- forthcoming
28. **Durán, JM** "Models, explanation, representation, and the philosophy of computer simulations" *Proceedings of the Association of Computer and Philosophy*
- 2021
27. Sand, M **Durán, JM**, Jongsma, K "Responsibility beyond design: physicians' requirements for ethical medical AI" *Bioethics* 00: 1– 8. <https://doi.org/10.1111/bioe.12887>.
- 2021
26. **Durán, JM** "Dissecting scientific explanation in AI (sXAI): a case for medicine and healthcare" *Artificial Intelligence* 297. <https://doi.org/10.1016/j.artint.2021.103498>

- 2021 25. **Durán, JM** and Jongsma, K. "Who is afraid of black-box algorithms? On the epistemological and ethical basis of trust in medical AI" *Journal of Medical Ethics* . 47:329-335.
<https://doi.org/10.1136/medethics-2020-106820>
- 2021 24. (In Spanish) **Durán, JM** "Simulación". In *Glosario de Filosofía de la Técnica*. Diego Parente, Agustín Berti y Claudio Célis Bueno (eds.).
- 2020 23. **Durán, JM** and Pirtle, Z. "Epistemic standards for participatory technology assessment: suggestions based upon Well-Ordered Science" *Science and Engineering Ethics*. 26:1709-1741.
<https://doi.org/10.1007/s11948-020-00211-7>.
- 2020 22. **Durán, JM** "What is a simulation model?" *Minds and Machines*. 30(3):301-323.
<https://doi.org/10.1007/s11023-020-09520-z>
- 2020 21. Schembera, B and **Durán, JM** "Dark Data as the new challenge for Big Data science and the introduction of the Scientific Data Officer" *Philosophy & Technology*. 33:93-115.
<https://doi.org/10.1007/s13347-019-00346-x>
- 2019 20. **Durán, JM** "A formal framework for computer simulations: surveying the historical record and finding their philosophical roots." *Philosophy & Technology*. 34:105-127.
<https://doi.org/10.1007/s13347-019-00388-1>
- 2018 19. **Durán, JM** and Formanek, N "Grounds for trust: Essential Epistemic Opacity and Computational Reliabilism" *Minds and Machines*. 28(4): 645-666. DOI: 10.1007/s11023-018-9481-6.
- 2018 18. **Durán, JM** "Ciencia de la computación y filosofía: unidades de análisis del software" *Principia: An International Journal of Epistemology*, 22(2): 203-227. DOI: 10.5007/1808-1711.2018v22n2p203
- 2017 17. **Durán, JM** "Varying the explanatory span: scientific explanation in computer simulations" *International Studies in the Philosophy of Science*. 31(1):27-45. DOI: 10.1080/02698595.2017.1370929
- 2017 16. **Durán, JM** "Eric Winsberg y la epistemología de las simulaciones computacionales". *Argumentos de Razón Técnica*. 20:87-101.
- 2017 15. **Durán, JM** "Simulaciones computacionales: un análisis de dos concepciones antagónicas". *Principia: An International Journal of Epistemology*. 21(1):125-140. DOI: 10.5007/1808-1711.2017v21n1p125
- 2017 14. **Durán, JM** "Varieties of simulations: from the analogue to the digital". In *The science and Art of Simulation I. Exploring - Understanding - Knowing*. Resch, M., Kaminski, A., and Gehring, P. (eds.). pp. 175-192. Springer. ISBN: 978-3-319-55761-8.
- 2017 13. **Durán, JM** "Computer simulations as a technological singularity in the empirical sciences". In *The Technological Singularity*, Callaghan, V., Miller, J., Yampolskiy, R., Armstrong, S. (eds.). pp. 167-179. Springer. ISBN: 978-3-662-54031-2.
- 2016 12. Barrantes, M and **Durán, JM** "Reid on causation and scientific explanation". *The Journal of Scottish Philosophy*. 14(1): 51-67. DOI: 10.3366/jsp.2016.0113
- 2016 11. **Durán, JM** "La especificidad de la creencia religiosa, algo distinto de la razón. Wittgenstein y los 'juegos de lenguaje'". *Revista de Filosofía Aurora.*, 28(43):279-294. DOI: 10.7213/aurora.28.043.AO01
- 2015 10. **Durán, JM** "Nociones de simulación computacional: simulaciones y modelos científicos". *Argumentos de Razón Técnica*. 18:87-110.
- 2015 9. **Durán, JM** "Simulaciones computacionales en la literatura filosófica actual". In *Epistemología y Prácticas Científicas* Rodríguez, V., Velasco, M., García, P. (eds.), Imprenta de la Facultad de Filosofía y Humanidades, Argentina. pp. 9-40.

- 2015 8. Durán, JM "Simulaciones computacionales como singularidad en las ciencias empíricas". In *Filosofía e Historia de la Ciencia en el Cono Sur*. Ahumada, J., Venturelli, N., y Chibeni, S. (eds.). AFIHC / CIFFyH, Argentina. pp. 223-232.
- 2013 7. Durán, JM "The use of the 'materiality argument' in the literature on computer simulations". In Durán J. M. and Arnold, E. (eds), *Computer Simulations and the Changing Face of Scientific Experimentation*, Cambridge Scholars Publishing. UK. pp. 76-98.
- 2011 6. García, P, Durán, JM, Ahumada, J "Experimentación, materialidad y simulaciones computacionales", in Torrano, A.; Passos Videira, A. (eds), *Representación en Ciencia y Arte*, Editorial Brujas. Argentina. pp. 73-82.
- 2010 5. Durán, JM "Computer simulations and traditional experimentation: from a material point of view", in Vallverdú, J. (ed), *Thinking Machines and the Philosophy of Computer Science: Concepts and Principles*. pp. 294-311. Editorial IGI Global. USA. ISBN: 978-1616920142.
- 2010 4. Durán, JM, Lodeyro, P and Bozzoli, M "El diseño de simulaciones digitales: una perspectiva desde las prácticas científicas", in García, P; Massolo, A. (eds), *Epistemología e Historia de la Ciencia: Selección de Trabajos de las XX Jornadas*, Imprenta de la Facultad de Filosofía y Humanidades. Argentina. pp. 204-210.
- 2009 3. Durán, JM "Grados de materialidad y simulaciones computacionales", in Letzen, D.; Lodeyro, P. (eds), *Epistemología e Historia de la Ciencia: Selección de Trabajos de las XIX Jornadas. Vol 15*, Imprenta de la Facultad de Filosofía y Humanidades. Argentina. pp 171-177.
- 2008 2. Durán, JM "Diagramas Hertzianos: lecturas de una interpretación", in Minhot, L.; Olivé, L. (eds), *Representación en la Ciencia y en el Arte*, Editorial Brujas. Argentina.
- 2007 1. Durán, JM "Reinterpretando a Hertz. Algunas consideraciones en torno a una lectura de Hertz", *Lektón. Revista de Filosofía*. 1(1):61-73.

Authored books

- 2018 2. Durán, JM "Computer simulations in science and engineering. Concepts - Practices - Perspectives". Springer Verlag. The Frontiers Collection. ISBN: 978-3-319-90880-9.
- 2014 1. Durán, JM "Explaining simulated phenomena. A defense of the epistemic power of computer simulations." *Ph.D. dissertation Universität Stuttgart*. Germany.
URL: <http://elib.uni-stuttgart.de/opus/volltexte/2014/9265>

Commissioned reviews

- 2020 3. Durán, JM "Calculating surprises: a review for the philosophy of computer simulations". *Metascience*. DOI: 10.1007/s11016-020-00527-x.
- 2016 2. Durán, JM "The practice turn and its effect on science studies". *Metascience*. 25(2):285-288. DOI: 10.1007/s11016-016-0085-6.
- 2016 1. Durán, JM "Observation and Objectivity: Two Conflicting Notions at the Basis of the Circularity Argument". *Constructivist Foundations*. 12(1):220-221.

Proceedings, magazines, and newsletters

- 2021 11. (various authors) "Tech Philosophers Explain The Bigger Issues With Digital Platforms, And Some Ways Forward". <https://3quarksdaily.com/3quarksdaily/2021/02/tech-philosophers-explain-the-bigger-issues-with-digital-platforms-and-some-ways-forward.html#more-193133>

- 2021 10. Casey, J. and **Durán, JM** (2020) *Why the FAIR principles are not enough: lost data and a case for FAIR+* <https://zenodo.org/record/4647978#.YGNtd68zYuU>
- 2020 9. Casey, J. and **Durán, JM** (2020) *Making Dark Data FAIR* <http://www.sobigdata.eu/blog/making-dark-data-fair>
- 2019 8. **Durán, JM** "A glimpse into the intertwining of epistemic opacity and moral opacity in AI systems". In Fosca Giannotti, Beatrice Rapisarda, Roberto Trasarti, and Valerio Grossi (eds), *SoBigData Magazine*, pp. 24. <http://www.sobigdata.eu/newsletter>.
- 2016 7. **Durán, JM** "Entrenching the epistemological side of computer simulations: explanation and unification". In Perdomo, I., Blanco, A., and Martínez, C. (eds), *Boletín de la Sociedad de Lógica, Metodología y Filosofía de la Ciencia en España.*, pp. 25-27. ISSN: 1577-2292.
- 2016 6. Kaminski, A and **Durán, JM** "TranSim: bringing philosophy and computer simulations together". *InSiDE. Innovative Supercomputing in Deutschland.* 14(2):33-37.
- 2013 5. **Durán, JM** "A brief overview of the philosophical study of computer simulations". *American Philosophical Association Newsletter on Philosophy and Computers.* 13(1):38-46.
- 2013 4. **Durán, JM** and Arnold, E "Introduction". In Durán J. M. and Arnold, E. (eds), *Computer simulations and the changing face of scientific experimentation*, Cambridge Scholars Publishing, UK. pp. 1-8.
- 2011 3. **Durán, JM** "The limits of computer simulations as epistemic tools". In Ess, C.; Hagengruber, R. (eds), *IA-CAP 2011 - The computational turn: Past, presents, futures?*, Mv-Wissenschaft, Münster, Århus University. Denmark., pp. 40-42.
- 2010 2. Dodig-Crnkovic, G, **Durán, JM**, and Slutej, D "Content aggregation, visualization and emergent properties in computer simulations". *SIGRAD 2010 – Content aggregation and visualization*, Mälardalen University. Sweden. pp. 77-83.
- 2009 1. **Durán, JM** "The measure of computer simulations". *Computing and Philosophy – CaP Course.* Gordana Dodig-Crnkovic. Mälardalen University. School of Innovation, Design and Engineering. Sweden.

Requested articles

2. **Durán, JM** "Computer Simulations" Knuuttila, T, Carrillo, N, & Koskinen, R. (eds.) The Routledge Handbook of Philosophy of Scientific Modeling.
1. (In Spanish) **Durán, JM** "La filosofía de las simulaciones computacionales: una mirada desde la filosofía de la ciencia y desde la ética." A. Cassini & C. Hidalgo (eds.) SADAF Ediciones. Argentina. In preparation

EDITIONS

Journals

- forthcoming* **Durán, JM**, Sand, M, and Jongsma, K (eds). Special Issue: "The ethics and epistemology of explanatory AI in medicine and healthcare" *Ethics and Information Technology*.
- 2021 **Durán, JM** and van den Hoven, J (eds). Special Issue: "The societal and ethical dimensions of computer simulations." *SIMULATION*.

Books

2013 **Durán, JM** and Arnold, E (eds) *Computer simulations and the changing face of scientific experimentation*, Cambridge Scholars Publishing. UK.

ARTICLES UNDER REVIEW & IN PREPARATION

Revise and resubmit

1. **Durán, JM** & Sand, M “ Epistemic Technological Responsibility” Matthew Dennis and Jeroen van den Hoven (eds.) *Values for a Post-Pandemic Future Ethics, Technology, and the ‘New Normal’* Springer.

Under review

3. **Durán, JM** “Computational exploratory strategies: lessons from medical simulations”. *Synthese*

3. Formanek, N & **Durán, JM** “Branches of ethics” In *Modeling and Simulation Body of Knowledge* The Society for Modeling & Simulation International. T. Ören (eds.).

2. Formanek, N & **Durán, JM** “Hypothesis/Proposing explanation – in simulation ” In *Modeling and Simulation Body of Knowledge* The Society for Modeling & Simulation International. T. Ören (eds.).

1. Formanek, N & **Durán, JM** “Testing explanation – in simulation ” In *Modeling and Simulation Body of Knowledge* The Society for Modeling & Simulation International. T. Ören (eds.).

In preparation

1. Pozzi, G and **Durán, JM** “On epistemic injustice in AI”

5. **Durán, JM** “Visualization and design for values in computer simulations: mapping the ethics debate”. Ready to submit.

2. **Durán, JM** “Reliability without transparency in ML”

1. **Durán, JM** “Credible results: computational reliabilism for machine learning”

TALKS

Keynote speaker

June 2022 6. *Italian Society for Logic and Philosophy of Science*. Università degli Studi di Milano-Bicocca. Italy.

March 2020 - Postpone due to COVID-19 5. *The philosophy computer-based scientific research: simulations, AI, and Big-Data*. Universidad Autónoma de México. México.

October 2019 4. *Dark Data y los nuevos desafíos para Open Data y Open Science*, Facultad de Ciencias Económicas. Universidad Nacional de Córdoba. Argentina

June 2019 3. *Two viewpoints for philosophically analyzing computer simulations*. International Association for Computing and Philosophy – Annual Meeting. Mexico City, Mexico.

July 2018 2. *The ethics of computer simulations: challenges and perspectives for the future of science and technology*. 8th International Conference on Simulation and Modeling. Methodologies, Technologies, and Applications. Porto, Portugal.

Nov. 2017 1. *El giro computacional en la filosofía de la ciencia*. XIX Foro Interno de Filosofía and III Congreso de Filósofos del Caribe - Universidad del Atlántico. Colombia.

Invited talks

June 2021 20. *Justificación y creencia en Machine Learning*. Universidad Autónoma de México. México.

May 2021 19. *But... is it credible? Computational reliabilism for ML*. Issues in Explainable Artificial Intelligence 2: Understanding and Explaining in Healthcare, Leverhulme Centre for the Future of Intelligence, University of Cambridge.

December 2020 18. *Matching Ethics and Law in AI: policy and practical implications for "Trustworthy" AI*, Re-Imagine Europe. European Parliament.

December 2020 17. *Computational Reliabilism*, University of Amsterdam.

November 2020 16. *Algunas consideraciones filosóficas acerca de sXAI*, FAMAF. Universidad Nacional de Córdoba. Argentina

May 2020 - Postpone due to COVID-19 15. *The ethics and epistemology of scientific explanation in medical AI*, Forschungszentrum Jülich, Universität Bonn.

June 2019 14. *Ethical concerns in scientific and engineering research with computer simulations*, Master of Science Engineering and Policy Analysis. TU Delft - Campus The Hague.

May 2019 13. *Dark Data in Big Data and the Scientific Data Officer*, Research Data Management - Data Champions. TU Delft.

March 2019 12. *Responsible research and innovation - H2020 - MSCA ACHIEVE-ITN*, Instituto de Microelectrónica Sevilla (IMSE-cnm), Universidad de Sevilla, Spain.

March 2018 11. *Una aproximación a la historia y filosofía de las simulaciones computacionales*, Escuela de Filosofía y Humanidades. Universidad Nacional de Córdoba. Argentina.

April 2018 10. *Meet the author*. Round table to discuss my forthcoming book: *Computer simulations in science and engineering. Concepts - Practices - Perspectives*, Springer Verlag. Escuela de Filosofía y Humanidades. Universidad Nacional de Córdoba. Argentina.

March 2018 9. *Understanding the role of computational methods in science*, Department of Mathematics. James Madison University. USA.

March 2018 8. *Computer simulations: the history and philosophy of a concept*, Department of Philosophy. University of Virginia. USA.

Jan. 2017 7. *Making the difference more visible: on mathematical models and simulation models*, Karlsruher Institut für Technologie. Germany.

Nov. 2016 6. *The discreet charm of contemporary scientific practice: Big Data and the problem of causality*. The scientific practice of Big Data. HLRS, University of Stuttgart.

Oct. 2015 5. *Philosophy of computer simulations or philosophy of science (focused on computer simulations)?*. HLRS, University of Stuttgart.

May 2012 4. *Historical introduction and overview of multi-scale modeling*. Graduate School SRC-SimTech, University of Stuttgart

June 2011 3. *Why computer simulations are epistemic devices*, Institut d'Histoire et des Philosophie des Sciences et des

Techniques, University Panthéon-Sorbonne, France

June 2011 2. *Epistemological status of simulations*, HLRS. University of Stuttgart

Accepted refereed presentations

- September 2021 39. *4th Conference on "Philosophy and Theory of Artificial Intelligence"*, University of Gothenburg.
- July 2021 38. *CEPE/IACAP Joint Conference 2021: The Philosophy and Ethics of Artificial Intelligence*, Universität Hamburg. With Giorgia Pozzi.
- Aug. 2019 37. *Computational reliabilism: building trust in medical simulations*. Division of Logic, Methodology and Philosophy of Science and Technology. Czech Technical University, Prague, Czechia. With N. Formanek.
- Nov. 2018 36. *Grounds for trust: Essential Epistemic Opacity and Computational Reliabilism*. Science and Art of Simulation '18. University of Stuttgart. Germany. With N. Formanek.
- May 2018
unable to attend 35. *On the explanatory force of computer simulations*. Canadian Society for the History and Philosophy of Science. University of Regina. Canada.
- March 2018 34. *The historical and philosophical roots of computer simulations*. Models and Simulations 8. University of South Carolina. USA.
- Oct. 2017 33. *Computer simulations: the history of a concept and its philosophical footprint*. 4th International Conference on the History and Philosophy of Computing. Masaryk University. Czech Republic.
- June 2017 32. *A survey on computer simulations and mathematical models*. SILFS 2017 – Triennial International Conference of the Italian Society for Logic and Philosophy of Science. University of Bologna. Italy.
- July 2017
unable to attend 31. *Un análisis de la arquitectura de modelos simulacionales*. IV Congreso Iberoamericano de Filosofía de la Ciencia y la Tecnología. Cultura Científica y Cultura Tecnológica. Universidad de Salamanca. Spain.
- May 2016 30. *Computer simulations and big-data science: reviewing similarities and differences*. The Forum on Philosophy, Engineering & Technology (fPET), Friedrich-Alexander University Erlangen-Nürnberg. Germany.
- June 2016 29. *Entrenching the epistemological side of computer simulations: explanation and unification*. III Congreso de Graduados de la Sociedad de Lógica, Metodología y Filosofía de la Ciencia en España. Universidad de Valencia. Spain.
- Sep. 2016 28. *Explaining simulated phenomena. A defense of the epistemic power of computer simulation*. On simulation in science. Media Culture of Computer Simulations (MECS). Leuphana University Lüneburg. Germany.
- July 2015 27. *Summer School: Scientific explanation and computer simulations*, USS-SWC 2015. University of Vienna. Austria.
- Aug. 2015 26. *Varietades de simulación(es)*, AFRA 2015. Universidad Nacional del Litoral. Argentina. With A. Ilcic.
- Sep. 2015 25. *Varying the explanatory span: scientific explanation in computer simulations*, German Society for Analytic Philosophy. Osnabrück University, Germany
- Aug. 2015
unable to attend 24. *Some philosophical considerations of the past, present, and future of computer simulations*, Conference on Experimenting with New Technologies in Society - TU Delft.
- Sep. 2014 23. *Simulaciones computacionales como singularidad en las ciencias empíricas*, IX Encuentro de Filosofía de la Ciencia del Cono Sur - XXV Jornadas de Epistemología e Historia de la Ciencia, Universidad Nacional de Córdoba. Argentina

- Sep. 2014 22. *Breve reseña sobre la reciente literatura filosófica en materia de simulaciones computacionales*, IX Encuentro de Filosofía de la Ciencia del Cono Sur - XXV Jornadas de Epistemología e Historia de la Ciencia, Universidad Nacional de Córdoba. Argentina.
- Oct. 2013 21. *Explicación de resultados de simulaciones computacionales: un análisis desde la perspectiva unificacionista*, Coloquio Internacional: Language, Conocimiento, y Acción. Universidad Nacional de Rosario. Argentina.
- Oct. 2013 20. *Las simulaciones computacionales como explicación científica*, XXIV Jornadas de Epistemología e Historia de la Ciencia. Universidad Nacional de Córdoba. Argentina.
- July 2012 19. *Explanation in computer simulation results: towards its conceptualization*, 5th Models and simulations conference, University of Helsinki. Finland.
- April 2012 18. *On the epistemic virtues of computer simulations in the form of explanation of results*, The Future of Philosophy of Science, Tilburg University. The Netherlands.
- July 2011 17. *Experiments in-silico?* Interdisciplinary Workshop with Javier Blanco: Ontological, Epistemological, and Methodological Aspects of Computer Science, University of Stuttgart. Germany.
- July 2011 16. *The limits of computer simulations as epistemic tools*, First International Conference of IACAP, Århus University. Denmark.
- Nov. 2010 15. *Content aggregation, visualization and emergent properties in computer simulations*, Crnkovic, G. , Durán, J. M., Slutej, D. SIGRAD 2010, Mälardalen University. Sweden.
- Oct. 2010 14. *A new approach towards the 'materiality problem' of computer simulations*, 26th Boulder Conference on the History and Philosophy of Science, University of Colorado at Boulder. USA.
- Oct. 2010 13. *The materiality problem in the dilemma of computer simulations*, Bochum-Lausanne-Tilburg Graduate School: Philosophy of Language, Mind and Science, Tilburg University. The Netherlands.
- July 2009 12. *Computer simulations and traditional experimentation: from a material point of view*, VII European Conference on Computing and Philosophy, University of Barcelona. Spain.
- July 2009 11. *Computer models: from a contemporary point of view*, I Latin American Symposium on Computer and Philosophy, Universidad Nacional Autónoma de México. Mexico.
- Oct. 2009 10. *Computer models revisited*, Modeling Spaces – Modifying Societies, University of Darmstadt. Germany.
- 2009 9. *Visualización y materialidad en simulaciones*, In collaboration. IV Simposio Internacional Representación en la Ciencia y en el Arte, Universidad Nacional de Córdoba. Argentina.
- 2009 8. *El diseño de simulaciones digitales: una perspectiva desde las prácticas científicas*, In collaboration. XX Jornadas de Epistemología e Historia de la Ciencia, Universidad Nacional de Córdoba. Argentina. With P. Lodeyro and M. Bozzoli
- Oct. 2008 7. *Simulaciones vs simulaciones computacionales*, IX Coloquios Internacionales Bariloche. Universidad del Comahue. Argentina.
- Aug. 2008 6. *Aspectos ontológicos de las simulaciones computacionales: ¿Un problema al que debemos prestar atención?*, X Conference Rolando Chuaqui Kettlun, Pontificia Universidad Católica de Chile. Chile.
- Nov. 2008 5. *Grados de materialidad y simulaciones computacionales*, XIX Jornadas de Epistemología e Historia de la Ciencia. Universidad Nacional de Córdoba. Argentina.
- May. 2008 4. *Algunas consideraciones sobre el problema ontológico de las simulaciones computacionales*, V Jornadas de

Filosofía Teórica. Universidad Nacional de Córdoba. Argentina.

- Sep. 2008 3. *Galileo y la herencia de modelos idealizados en ciencia*, XIV Congreso Nacional de Filosofía de la Asociación Filosófica de la República Argentina, Universidad Nacional de Tucumán. Argentina.
- 2007 2. *Diagramas Hertzianos: lecturas de una interpretación*, III Simposio Internacional Representación en la Ciencia y en el Arte, Universidad Nacional de Córdoba. Argentina.
- June 2006 1. *La especificidad de la creencia religiosa: algo distinto a la razón*, III Conferencia de filosofía teórica: Conocimiento, normatividad y acción, Universidad Nacional de Córdoba. Argentina.

Other conference contributions

- 2019 6. *ESME 2019. The Pro-Res SoBigData Workshop about Ethics, Privacy and Explainable AI*. Pisa, Italy.
- 2017 5. *Summer School: On Computer Simulation Methods*. High Performance Computing Center Stuttgart - University of Stuttgart.
- 2017 4. *Varieties of Modeling in Technoscience: The Case of Synthetic Biology*. Technische Universität Darmstadt.
- 2016 3. *On simulation in science*. Media Culture of Computer Simulations (MECS). Leuphana University Lüneburg.
- 2015 2. *The computational turn. Simulation in science*. USS-SWC 2015. University of Vienna, Austria
- 2013 1. *The philosophical history of modern space-time theory*, with Robert DiSalle. University of Tübingen, Germany

COLLABORATION IN RESEARCH NETWORKS

-
- 2020 – research associate 21. *TPM AI Lab*. Personal research: Scientific explanation and understanding in AI: epistemological and normative goods
- 2020 – 2021 research associate 20. *Making Dark Data Fair*. In consortium with TU Delft (Prof. Kees Vuik); Uni-Stuttgart (Prof. Michael Resch); Uni-Pisa (Prof. Fosca Giannotti); Uni-Exeter (Prof. Sabina Leonelli).
- 2019 – organizer 19. *Cambridge-Saarbrücken-Delft Workshop series “Issues in Explainable AI”* - Center for the Future of Intelligence (University of Cambridge), Universität Saarbrücken - TU Delft.
- 2019 – 2021 committee member 18. The Society for Modeling & Simulation International Committee for the development of the book *Modeling and Simulation Body of Knowledge for SCS*.
- 2018 – research associate 17. *SoBigData: Social Mining & Big Data Ecosystem. A research infrastructure. Funding: Horizon 2020 research and innovation programme. Grant No. 654024*.
- 2018 – research associate 16. *Delft Design for Values. Design for Values in Artificial Intelligence*. Personal research: The value of algorithmic transparency: explanation and understanding.
- 2018 – research associate 15. *Research Data Management - Data Champions. TU Delft*. Personal research: Dark Data in Big Data and the Scientific Data Officer.
- 2018 – research associate 14. *4TU.Center for Ethics and Technology*. Personal research: Explanation is not merely an epistemic endeavor: the values and ethics of explaining and understanding algorithms.
- 2018 – 2021 research associate 13. *Simulaciones computacionales y experimentación desde la perspectiva de las prácticas científicas: una*

- aproximación epistemológica y metodológica PICT-2016-1524*. Dr. Pío García, CIFYH, UNC, Argentina. AR\$: 504.000 .
- 2017 – present 12. *Ethics of Computer Simulations* with Prof. Dr. Tuncer Ören (University of Ottawa), Canada.
- 2016 – 2017 11. *Participatory Technology Assessment* with Zachary Pirtle - National Aeronautics and Space Administration (NASA), USA.
- 2015 – 2016
research associate 10. *Filosofía de las prácticas científicas: computación, simulación y experimentación*. Dr. Pío García, Centro de Estudios Avanzados (CEA), UNC, Argentina. US\$: 5,000
- 2012 – 2015
research associate 9. *Las prácticas científicas experimentales y observacionales: enfoque epistemológico desde las simulaciones computacionales y modelización matemática*. Prof. Víctor Rodríguez. Scientific and Technological Research Fund (FONCyT), UNC, Argentina. US\$: 60,000.
- 2012 – 2015
research associate 8. *Filosofía de las prácticas científicas: computación, simulación y experimentación* Dr. Pío García, Dr. Marisa Velasco, SECyT, UNC, Argentina. US\$: 10,000
- 2010 – 2012
research assistant 7. *Scientific network 'atmosphere & algorithms'* Dr. Gabriele Gramelsberger. Deutsche Forschungsgemeinschaft (DFG), Universität Stuttgart, Germany.
- 2010 – 2012
research assistant 6. *Simulaciones computacionales e instrumentos científicos: materialidad, visualización y ampliación cognitiva* Dr. Pío García. SECyT, UNC, Argentina.
- 2010 – 2012
research assistant 5. *Filosofía de las practicas científicas: simulaciones computacionales*. Dr. Pío García. CEA, UNC, Argentina
- 2008 – 2011
research assistant 4. *Filosofía y ciencia computacional: epsitemología, ontología y metodología*. Dr. Javier Blanco, Dr. Pío García. Ministry of Science and Technology of Córdoba, UNC, Argentina. US\$: 10,000.
- 2008 – 2010
research assistant 3. *Filosofía de las prácticas científicas: heurísticas, simulación y experimentación*. Prof. Víctor Rodríguez, Dra. Marisa Velasco. CIFYH, UNC, Argentina. US\$: 1,000
- 2007 – 2009
reseach student 2. *Simulaciones computacionales y representación en el contexto de las prácticas científicas*. Dr. José Ahumada, Dr. Pío García, CIFYH, SECyT, UNC, Argentina. US\$: 1,000
- 2006 – 2008
research student 1. *Simulaciones computacionales y representación en el contexto de las prácticas científicas: aspectos epistemológicos*. Dr. José Ahumada, Dr. Pío García. SECyT, UNC, Argentina. US\$: 5,000

STUDENT SUPERVISION

PostDoc supervision

2020-2021
Daily supervisor Dr. Jack Casey
European Open Science Cloud - Project: *Making Dark Data FAIR*.

Ph.D. supervision

2020-2024
Daily supervisor Jonne Mass
HumaneAI - Project: *Ethics in design: methods and tools for the responsible development of AI systems*.

2020-2024
Daily supervisor Giorgia Pozzi
SoBigData++ - Project: *The ethics and epistemology of explanatory AI*.

Master students supervision

- 2020
Second supervisor
Amirali Khaleghi. MoT - TU Delft.
Thesis: *Towards achieving gender equality in automated loan approval processes.*
- 2020
Main supervisor
Arnoud Nederpel. MoT - TU Delft.
Thesis: *Ethical behavior with artificial intelligence in the Dutch information technology industry.*
- 2019
Advisor
Juan Ruiz Reina. MoT. TU Delft.
Thesis: *Towards a Responsible Implementation of Artificial Intelligence in Health Care.*
- 2016–2018
Main supervisor
Verónica Inés Pedersen. Facultad de Humanidades, Universidad Nacional del Nordeste, Argentina.
Thesis: *Las simulaciones computacionales como nuevo nicho de producción científica.*

PhD Defence - Committee participation

- 2020
The rise of the learning machines. Ezequiel López Rubio - University of Malaga
Committee members: Gualtiero Piccinini, Jesús Zamora, and JMD.

TEACHING

English

- 2021 – *Philosophy of Engineering Science and Design (WM0349WB).* Course Manager. TU Delft. All Master Programs at TU Delft.
- 2021 – *Values in ICT (TPM014A - TPM015A).* Course Manager. TU Delft. All Master Programs at TU Delft.
- 2019 – 2020 *IT and Values WM033IT.* Course Manager. TU Delft. EWI
- 2018 – *Research Design. R1.A1.* Lecturer. TU Delft. Graduate School
- 2018 – *Creative & Critical Thinking in Engineering. R2.D1.* Course Manager. TU Delft. Graduate School
- 2019 *Philosophy of Science WM0349WB.* Tutor. TU Delft.
- 2019 *Ethics and Transportation WM1301TU.* Tutor. TU Delft.
- 2018 – 2019 *Ethics & Engineering. WM0320TU.* Tutor. TU Delft.
- 2018 – *Critical Reflections on Technology UD2010.* Tutor. TU Delft.
- SS 2018 *Ethics of Technology.* Lecturer. University of Stuttgart. Undergraduate course.
- WS 2017 *Philosophy of Computer Science.* Lecturer. University of Stuttgart. Undergraduate course.
- SS 2017 *Philosophy of Computer Science.* Lecturer. University of Stuttgart. Undergraduate course.
- WS 2016 *Philosophy of Scientific Explanation.* Lecturer. University of Stuttgart. Postgraduate course.
- WS 2009 *Philosophy of Computer Simulation.* Lecturer. Institute of Philosophy. University of Stuttgart. Undergraduate course.

Spanish

- SS 2015 *Filosofía de Informática.* Adjunct Professor. FFyH, UNC. Undergraduate and Graduate course.

- WS 2015 *Explicación Científica*. Adjunct Professor. FFyH, UNC. Graduate seminar.
- SS 2014 *Filosofía de las Simulaciones Computacionales*. Adjunct Professor. FFyH, UNC. Graduate course.
- WS 2014 *Filosofía de Informática*. Adjunct Professor. FFyH, UNC. Undergraduate and Graduate course.
- 2014 – 2016 *Filosofía de la Ciencia*. Adjunct Professor. FFyH, UNC. Undergraduate course.
- 2008 – 2010 *Lógica y Resolución de Problemas* (Logic and critical thinking). Assistant Professor (tenured). College “Simón Bolívar”, Argentina. Undergraduate course.
- 2008 – 2009 *Filosofía de la Ciencia*. Adjunct Professor. FFyH, UNC. Undergraduate course.
- 2008 – 2009 *Problemas Epistemológicos de la Psicología*. Adjunct Professor. Facultad de Psicología. UNC. Undergraduate course.
- 2007 – 2009 *Problemas Epistemológicos de la Psicología*. Online Instructor. Facultad de Psicología. UNC. Undergraduate course.
- 2005 – 2007 *Metafísica*. Teacher Assistant. FFyH, UNC. Undergraduate course.
- 2005 – 2007 *Problemas Epistemológicos de la Psicología*. Teacher Assistant. Facultad de Psicología. UNC. Undergraduate course.
- 2002 – 2003 *Algoritmos y Estructuras de Datos I*. Student Assistant. Facultad de Matemática, Astronomía, Física y Computación. UNC. Undergraduate course.
- 2001 – 2002 *Introducción a la Lógica y la Computación*. Student Assistant. Facultad de Matemática, Astronomía, Física y Computación. UNC. Undergraduate course.

PROFESSIONAL SERVICE

Presiding International Commissions

- Dec 2021 – President *Commission on the Philosophy of Technology and Engineering Sciences*
 Division of Logic, Methodology, and Philosophy of Science and Technology
 International Union of History and Philosophy of Science and Technology

Reviewer for academic journals and books

19. *International Studies in the Philosophy of Science*; 18. *The British Journal for the Philosophy of Science*; 17. *Synthese*; 16. *European Journal for Philosophy of Science*; 15. *Minds and Machines*; 14. *Philosophy & Technology*; 13. *Artificial Intelligence*; 12. *Foundations of Science*; 11. *Ethics and Information Technology*; 10. *Ethical Theory and Moral Practice*; 9. *Engineering Studies*; 8. *Science and Engineering Ethics*; 7. *Computer & Education*; 6. *NTM Journal of the History of Science, Technology and Medicine*; 5. *Crítica*; 4. *Scientific Journal Guillermo de Ockham*; 3. *Springer - International Library of Ethics, Law and Technology*; 2. *IACAP 2019 Proceedings*; 1. *Science and Art of Simulation 2015 - XXV Jornadas de epistemología e historia de la ciencia*; IX *Encuentro AFHIC*.

External reviewer

4. *Swiss National Science Foundation* – 3. *Estonian Research Council* – 2. *Fondo para la Investigación Científica y Tecnológica (Argentina)* – 1. *Programa de Filosofía de la Ciencia. Universidad Nacional Autónoma de México*.

World Health Organization External Expert Group review of WHO draft guidance on ethics and governance of artificial intelligence for health.

Participation in scientific committees

- 27-29-10-2021 6th International Conference on the History and Philosophy of Computing (HaPoC-6) - ETH Turing Centre, Zurich, Switzerland.
- 8,9-10-2021 Issues in Explainable AI #3: Bias and Discrimination in Algorithmic - Decision-Making - Universität Hannover, Germany.
- 22-04-2021 Dutch Research School of Philosophy (OZSW) - Graduate Conference in Theoretical Philosophy 2021.
- 06-2021 Workshop on Ethics and Privacy of Big Data for Migration research.

Outreach

- 2019 Interview on AI & Data Privacy for *TU Delta*.
<https://www.delta.tudelft.nl/article/what-artificial-intelligence-ai-means-your-privacy>

Memberships and advisory boards

- 2021 – Member of the Advisory Board “AI-based methods for countering disinformation”. Prof. Dr. Kalina Bontcheva.
- 2021 – Member. *Dutch Research School of Philosophy (OZSW)*.
- 2021 – Coordinador Científico - Ciencias Sociales y Humanidades.
Red de Científicos e Investigadores Argentinos en los Países Bajos.
- 2020 – Member of the Advisory Board of Operational Ethics and Legality - *SoBigData++* –
<http://project.sobigdata.eu>.
- 2020 – Work Package Leader - Responsible Data Science- *SoBigData++* – <http://project.sobigdata.eu>
- 2019 External advisor for the implementation of new policies and ethics in data management - *Library* - *TU Delft*.
- 2018 – present External advisor *ECienTec* - Educación en Ciencias y Tecnologías. Universidad Nacional del Centro de la Provincia de Buenos Aires - Argentina.
- 2017 – present Editorial advisor *History and Philosophy of Science* - Cambridge Scholars Publishing.
- 2016 – present Member of the editorial board (Redaktionsmitglied) *Jahrbuch Technikphilosophie*

Departmental duties

- 2020 – *TU-Delft representative in the Dutch Research School of Philosophy chamber on theoretical philosophy*.
Nederlandse Onderzoeksschool Wijnbegeerte (OZSW).
- Digital Philosophy Seminar*. Twice a month seminar with PhD students and Postdocs.
- 2020 – Assistant to the President for the “Commission on the Philosophy of Technology and Engineering Sciences”.
 Division of Logic, Methodology, and Philosophy of Science and Technology. International Union of History and Philosophy of Science and Technology.
- 2020 – Student Internship Coordinator. Faculty of Technology, Policy and Management. Delft University of Technology

- 2015 – 2018 Deputy. Department of Philosophy and Technology of Computer Simulations. HLRS. University of Stuttgart.
- Organization of academic events**
- May 2022 Chair and program organizer. Saarbrücken-Cambridge-Hannover-Delft workshop series “Issues in explainable AI #4: Between epistemology and ethics of XAI”. TU Delft.
- April 2021 Chair and program organizer. Workshop III: Data, Society, and Open Science - Challenges for data management and data-based research. TU Delft.
- March 2021 Chair and program organizer. Workshop II: Data, Society, and Open Science - Roundtable on the FAIR principles and data-driven scientific practice. TU Delft.
- November 2020 Chair and program organizer. Workshop I: Data, Society, and Open Science - Making Dark Data FAIR. TU Delft.
- April 2021 Chair and program organizer. One-week workshop - Lorentz Center - NIAS-KNAW - Lorentz Theme Group Fellowship. Title of the workshop: *Accountability in medical autonomous expert systems: ethical and epistemological challenges for explainable AI*. University of Leiden.
- 2018 – 2019 Assistance for the organization *DLMPST symposium: Academic Means-End Knowledge in Engineering, Medicine and other Practical Sciences*. 16th Congress of Logic, Methodology and Philosophy of Science and Technology (CLMPST 2019); Czech Technical University, Prague, Czechia; 5–10 August 2019.
- 2015 – 2018 yearly workshop Program committee member and chief organizer:
Workshop: *The science and art of simulation (SAS)* HLRS, University of Stuttgart
- Jun.16 Organization *Tag der Wissenschaft* - HLRS, University of Stuttgart.
- 2015 Organization Manuel Barrantes on “*Explicación Contrafáctica en Ciencia y Matemáticas*” Centro de Investigaciones de Filosofía y Humanidades, UNC.
- 2011 Chair and program committee member *SimTech conference: computer simulations and the changing face of scientific experimentation*, SRC-SimTech, University of Stuttgart
- 2011 Chair and program committee member *SimTech workshop: interdisciplinary workshop with Prof. Dr. Javier Blanco*. SRC-SimTech, University of Stuttgart
- 2009 Chair, program committee member, and promoter of the *First Latinamerican Computer and Philosophy Symposium (LA-CAP)*. Universidad Nacional Autónoma de México, México.
The LA-CAP started as the Latin-American branch of the IA-CAP the year before it become an unified international event.

LANGUAGES

Spanish: Mother tongue

English: Excellent (C2)

Portuguese: Excellent (C2)

German: Good (B1)

Dutch: Basic (A1)

ACADEMIC REFERENCES

References upon request