

JUAN M. DURÁN

PERSONAL INFORMATION

<i>e-Mail</i>	j.m.duran@tudelft.nl – juanduran@gmail.com
<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 - Computer-Based Science (computer simulations, Big-Data, AI) - Ethics of Technology and Computer Ethics
<i>AOC:</i>	History of Science - History and Philosophy of Technology - Philosophy of Medicine - Philosophy of Mathematics - Logic and Critical Thinking - Philosophy of Mind

EMPLOYMENT

<i>Sep. 2020 –</i>	<i>Assistant Professor - Tenure-Track - Full time - Delft University of Technology - Faculty of Technology, Policy and Management</i>
<i>Sep. 2018 – Sep. 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>Adjunct Professor - 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>
<i>2003 – 2007</i>	<i>Licenciado philosophy - Facultad de Filosofía y Humanidades (FFyH) - UNC - Argentina ⁴</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³ Withdrawn in favor of the Ph.D. position at SRC-SimTech.

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

- 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

- Pre-selected under review* *Accountability in medical autonomous expert systems: ethical and epistemological challenges for explainable AI.* J.M.D. as Principal Investigator. Collaborators: Giuseppe Primiero (University of Milan), Martin Sand (Delft University of Technology), Karin Jongsma (University Medical Center Utrecht) and Sander Beckers (Munich Center for Mathematical Philosophy). NIAS-LORENTZ Theme Group 2020/21 - NIAS and Lorentz Center. The Netherlands.
- under review Horizon 2020* *E-LAPLACE.* Project in collaboration: to audit algorithms by explanation and transparency, study algorithmic bias, and to consider new solutions balancing different trade-offs (ethical, societal, legal economical).
Call Horizon 2020. FET Open – Novel ideas for radically new technologies Consortium with 10+ members from Academia, NGOs, and Industry.
- in preparation - ERC Starting Grant* *eXplanatory AI for Healthcare (XAI4Healthcare): a framework for the epistemology of explainable AI in healthcare systems.* J.M.D. as Principal Investigator. The project will provide a suitable notion of explanatory algorithms and surrounding concepts (i.e., understanding, transparency, accountability) both from an epistemic perspective as well as an ethical one. It will also suggest a computationally functional framework of how to operationalize eXplAIIn.Healthcare.

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.

in preparation - ITN *Innovative Training Networks*. Network of joint doctoral programmes - Delft University of Technology, Politecnico Milano, RWTH Aachen.

Research Grants Awarded

- 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. 270,000 €.
- 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).

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* (12) "Computational exploratory strategies: lessons from medical simulations" *Perspectives on Science*. J. M. Durán and A. Gelfert.
- forthcoming* (11) "A formal framework for computer simulations: surveying the historical record and finding their philosophical roots ." *Philosophy & Technology*.
- 2019* (10) "Dark Data as the new challenge for Big Data science and the introduction of the Scientific Data Officer" *Philosophy & Technology*. B. Schembera and J. M. Durán. DOI: 10.1007/s13347-019-00346-x
- 2018* (9) "Grounds for trust: Essential Epistemic Opacity and Computational Reliabilism" *Minds and Machines*. J. M. Durán and N. Formanek. 28(4): 645-666. DOI: 10.1007/s11023-018-9481-6.
- 2018* (8) "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* (7) "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* (6) "Eric Winsberg y la epistemología de las simulaciones computacionales". *Argumentos de Razón Técnica*. 20:87–101.
- 2017* (5) "Simulaciones computacionales: un análisis de dos concepciones antagónicas". *Principia: An*

International Journal of Epistemology. 21(1):125–140. DOI: 10.5007/1808-1711.2017v21n1p125

- 2016 (4) "Reid on causation and scientific explanation". *The Journal of Scottish Philosophy*. M. Barrantes and J. M. Durán. 14(1): 51-67. DOI: 10.3366/jsp.2016.0113
- 2016 (3) "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 (2) "Nociones de simulación computacional: simulaciones y modelos científicos". *Argumentos de Razón Técnica*. 18:87-110.
- 2007 (1) "Reinterpretando a Hertz. Algunas consideraciones en torno a una lectura de Hertz", *Lektón. Revista de Filosofía*. 1(1):61-73.

Books

- 2018 (2) "Computer simulations in science and engineering. Concepts - Practices - Perspectives". Springer Verlag. The Frontiers Collection. ISBN: 978-3-319-90880-9.
- 2014 (1) "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>

Peer-Reviewed Chapters

- forthcoming* (11) "The ethics of climate simulations: the case of an F3 type tornado". In *The science and Art of Simulation II*. Resch, M., Kaminski, A., and Gehring, P. (eds.). Springer.
- 2017 (10) "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 (9) "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.
- 2015 (8) "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 (7) "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 (6) "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 (5) "Experimentación, materialidad y simulaciones computacionales", in Torrano, A.; Passos Videira, A. (eds), *Representación en Ciencia y Arte*, Editorial Brujas. Argentina. P. García, J. M. Durán, and J. Ahumada. pp. 73-82.
- 2010 (4) "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 (3) "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. J. M. Durán, P. Lodeyro, and M. Bozzoli, pp. 204-210.

- 2009 (2) "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 (1) "Diagramas Hertzianos: lecturas de una interpretación", in Minhot, L.; Olivé, L. (eds), *Representación en la Ciencia y en el Arte*, Editorial Brujas. Argentina.

Reviews

- 2016 (2) "Observation and Objectivity: Two Conflicting Notions at the Basis of the Circularity Argument". *Constructivist Foundations*. 12(1):220–221.
- 2016 (1) "The practice turn and its effect on science studies". *Metascience*. 25(2):285–288. DOI: 10.1007/s11016-016-0085-6

Proceedings, Magazines, and Newsletters

- 2019 (8) "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) "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) "TranSim: bringing philosophy and computer simulations together". *InSiDE. Innovative Supercomputing in Deutschland*. 14(2):33-37. A. Kaminski and J. M. Durán.
- 2013 (5) "A brief overview of the philosophical study of computer simulations". *American Philosophical Association Newsletter on Philosophy and Computers*. 13(1):38-46.
- 2013 (4) "Introduction". In Durán J. M. and Arnold, E. (eds), *Computer simulations and the changing face of scientific experimentation*, Cambridge Scholars Publishing. UK. J. M. Durán and E. Arnold, pp. 1-8.
- 2011 (3) "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) "Content aggregation, visualization and emergent properties in computer simulations". *SIGRAD 2010 – Content aggregation and visualization*, Mälardalen University. Sweden. G. Dodig-Crnkovic, J. M. Durán, and D. Slutej, pp. 77-83.
- 2009 (1) "The measure of computer simulations". *Computing and Philosophy – CaP Course. Gordana Dodig-Crnkovic*. Mälardalen University. School of Innovation, Design and Engineering. Sweden.

Articles for Revise & Resubmit

Revise & Resubmit

- (1) "Epistemic standards for participatory technology assessment: suggestions based upon Well-Ordered Science" *Science and Engineering Ethics*.
A co-authored paper where we connect Kitcher's Well-Ordered Science with some actual Participatory Technology Assessment carried out at NASA. J. M. Durán and Z. Pirtle (George Washington University/NASA Headquarters).

Articles Under Review

under review (1) "What is a computer model?". Paper where I argue for the novelty of computer simulations in the philosophy of science

Requested Articles

in preparation (4) "Branches of ethics" In *Modeling and Simulation Body of Knowledge* The Society for Modeling & Simulation International. T. Ören (eds.)

in preparation (3) "Hypothesis/Proposing explanation – in simulation " In *Modeling and Simulation Body of Knowledge* The Society for Modeling & Simulation International. T. Ören (eds.)

in preparation (2) "Testing explanation – in simulation " In *Modeling and Simulation Body of Knowledge* The Society for Modeling & Simulation International. T. Ören (eds.)

in preparation (1) (In Spanish) "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.

Articles in Preparation

in preparation (3) "Explaining eXplanatory AI"

in preparation (2) "Epistemic opacity in expert system for medicine and the health system." In collaboration with K. Jongasma (University Medical Center Utrecht)

in preparation (1) "Validating computational models in astronomy." In collaboration with M. Bozzoli and M. J. de León Domínguez Romero.

EDITIONS

Journals

forthcoming Special Issue: "The societal and ethical dimensions of computer simulations." Journal *SIMULATION*. Editors: J. M. Durán and J. van den Hoven.

Books

2013 *Computer simulations and the changing face of scientific experimentation*, Cambridge Scholars Publishing. UK. Editors: Durán, J. M. and Arnold, E.

TALKS

Keynote Speaker

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

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

July 2018 *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 *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 Lectures

March 2020 *Issues in Explainable Artificial Intelligence 2: Understanding and Explaining in Healthcare*, Leverhulme Centre for the Future of Intelligence, University of Cambridge.

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

May 2019 *Dark Data in Big Data and the Scientific Data Officer*, Research Data Management Delft University of Technology. Data Champions. Delft University of Technology.

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

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

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

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

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

Nov. 2016 *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 *Philosophy of computer simulations or philosophy of science (focused on computer simulations)?*. HLRS, University of Stuttgart.

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

June 2011 *Why computer simulations are epistemic devices*, Institut d'Histoire et des Philosophie des Sciences et des Techniques, University Panthéon-Sorbonne, France

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

Accepted Refereed Presentations

Aug. 2019 *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 *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 *On the explanatory force of computer simulations.* Canadian Society for the History and Philosophy of Science. University of Regina. Canada.
- March 2018 *The historical and philosophical roots of computer simulations.* Models and Simulations 8. University of South Carolina. USA.
- Oct. 2017 *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 *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 *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 *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 *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 *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 *Summer School: Scientific explanation and computer simulations, USS-SWC 2015.* University of Vienna. Austria.
- Aug. 2015 *Varietades de simulación(es), AFRA 2015.* Universidad Nacional del Litoral. Argentina. With A. Ilcic.
- Sep. 2015 *Varying the explanatory span: scientific explanation in computer simulations,* German Society for Analytic Philosophy. Osnabrück University, Germany
- Aug. 2015
unable to attend *Some philosophical considerations of the past, present, and future of computer simulations,* Conference on Experimenting with New Technologies in Society - Delft University of Technology. The Netherlands.
- Sep. 2014 *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 *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 *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 *Las simulaciones computacionales como explicación científica, XXIV Jornadas de Epistemología e Historia de la Ciencia.* Universidad Nacional de Córdoba. Argentina.
- July 2012 *Explanation in computer simulation results: towards its conceptualization,* 5th Models and simulations conference, University of Helsinki. Finland.
- April 2012 *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 *Experiments in-silico?* Interdisciplinary Workshop with Javier Blanco: Ontological, Epistemological, and Methodological Aspects of Computer Science, University of Stuttgart. Germany.
- July 2011 *The limits of computer simulations as epistemic tools*, First International Conference of IACAP, Åarhus University. Denmark.
- Nov. 2010 *Content aggregation, visualization and emergent properties in computer simulations*, Crnkovic, G. , Durán, J. M., Slutej, D. SIGRAD 2010, Mälardalen University. Sweden.
- Oct. 2010 *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 *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 *Computer simulations and traditional experimentation: from a material point of view*, VII European Conference on Computing and Philosophy, University of Barcelona. Spain.
- July 2009 *Computer models: from a contemporary point of view*, I Latin American Symposium on Computer and Philosophy, Universidad Nacional Autónoma de México. Mexico.
- Oct. 2009 *Computer models revisited*, Modeling Spaces – Modifying Societies, University of Darmstadt. Germany.
- 2009 *Visualización y materialidad en simulaciones*, In collaboration. IV Simposio Internacional Representación en la Ciencia y en el Arte, Universidad Nacional de Córdoba. Argentina.
- 2009 *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 *Simulaciones vs simulaciones computacionales*, IX Coloquios Internacionales Bariloche. Universidad del Comahue. Argentina.
- Aug. 2008 *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 *Grados de materialidad y simulaciones computacionales*, XIX Jornadas de Epistemología e Historia de la Ciencia. Universidad Nacional de Córdoba. Argentina.
- May. 2008 *Algunas consideraciones sobre el problema ontológico de las simulaciones computacionales*, V Jornadas de Filosofía Teórica. Universidad Nacional de Córdoba. Argentina.
- Sep. 2008 *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 *Diagramas Hertzianos: lecturas de una interpretación*, III Simposio Internacional Representación en la Ciencia y en el Arte, Universidad Nacional de Córdoba. Argentina.
- June 2006 *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 *ESME 2019. The Pro-Res SoBigData Workshop about Ethics, Privacy and Explainable AI*. Pisa, Italy.

- 2017 *Summer School: On Computer Simulation Methods*. High Performance Computing Center Stuttgart - University of Stuttgart.
- 2017 *Varieties of Modeling in Technoscience: The Case of Synthetic Biology*. Technische Universität Darmstadt.
- 2016 *On simulation in science*. Media Culture of Computer Simulations (MECS). Leuphana University Lüneburg.
- 2015 *The computational turn. Simulation in science*. USS-SWC 2015. University of Vienna, Austria
- 2013 *The philosophical history of modern space-time theory*, with Robert DiSalle. University of Tübingen, Germany

COLLABORATION IN RESEARCH NETWORKS

- 2019 – organizer *Cambridge-Saarbrücken-Delft Workshop series “Issues in Explainable AI”* - Center for the Future of Intelligence (University of Cambridge), Universität Saarbrücken - Delft University of Technology.
- 2019 – committee member The Society for Modeling & Simulation International Committee for the development of the book *Modeling and Simulation Body of Knowledge for SCS*.
- 2018 – research associate *SoBigData: Social Mining & Big Data Ecosystem. A research infrastructure*. Funding: Horizon 2020 research and innovation programme. Grant No. 654024.
- 2018 – research associate *Delft Design for Values. Design for Values in Artificial Intelligence*. Personal research: The value of algorithmic transparency: explanation and understanding.
- 2018 – research associate *Research Data Management Delft University of Technology. Data Champions. Delft University of Technology*. Personal research: Dark Data in Big Data and the Scientific Data Officer.
- 2018 – research associate *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 *Simulaciones computacionales y experimentación desde la perspectiva de las prácticas científicas: una aproximación epistemológica y metodológica* PICT-2016-1524. Dr. Pío García, CIFFyH, UNC, Argentina. AR\$: 504.000 .
- 2017 – present *Ethics of Computer Simulations* with Prof. Dr. Tuncer Ören (University of Ottawa), Canada.
- 2016 – 2017 *Participatory Technology Assessment* with Zachary Pirtle - National Aeronautics and Space Administration (NASA), USA.
- 2015 – 2016 research associate *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 *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 *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 *Scientific network ‘atmosphere & algorithms’* Dr. Gabriele Gramelsberger. Deutsche Forschungsgemeinschaft (DFG), Universität Stuttgart, Germany.
- 2010 – 2012 research assistant *Simulaciones computacionales e instrumentos científicos: materialidad, visualización y ampliación cognitiva* Dr. Pío García. SECyT, UNC, Argentina.

- 2010 – 2012
research assistant *Filosofía de las practicas científicas: simulaciones computacionales.* Dr. Pío García. CEA, UNC, Argentina
- 2008 – 2011
research assistant *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 *Filosofía de las prácticas científicas: heurísticas, simulación y experimentación.* Prof. Víctor Rodríguez, Dra. Marisa Velasco. CIFFyH, UNC, Argentina. US\$: 1,000
- 2007 – 2009
reseach student *Simulaciones computacionales y representación en el contexto de las prácticas científicas.* Dr. José Ahumada, Dr. Pío García, CIFFyH, SECyT, UNC, Argentina. US\$: 1,000
- 2006 – 2008
research student *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

- 2019
Master of Arts *Amirali Khaleghi.* Supervisor. Technology, Policy and Management - Delft University of Technology. Thesis: .
- 2019
Master of Arts *Arnoud Nederpel.* Supervisor. Technology, Policy and Management - Delft University of Technology. Thesis: *Ethical behavior with artificial intelligence in the Dutch information technology industry.*
- 2019
Master of Arts *Juan Ruiz Reina.* Advisor. Technology, Policy and Management - Delft University of Technology. Thesis: *Towards a Responsible Implementation of Artificial Intelligence in Health Care.*
- 2016–2018
Master of Arts *Verónica Inés Pedersen.* Main Supervisor. Facultad de Humanidades, Universidad Nacional del Nordeste, Argentina. Thesis: *Las simulaciones computacionales como nuevo nicho de producción científica.*

TEACHING

English

- 2019 – *IT and values WM033IT.* Lecturer. Delft University of Technology.
- 2018 – *Research design. R1.A1.* Lecturer. Delft University of Technology. Graduate School
- 2018 – *Creative & critical thinking in engineering. R2.D1.* Lecturer. Delft University of Technology. Graduate School
- 2019 *Philosophy of science WM0349WB.* Tutor. Delft University of Technology.
- 2019 *Ethics and Transportation WM1301TU.* Tutor. Delft University of Technology.
- 2018 – 2019 *Ethics & Engineering. WM0320TU.* Tutor. Delft University of Technology.
- 2018 – *Critical reflections on technology UD2010.* Tutor. Delft University of Technology.
- 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

- WS 2015 *Explicación científica*. Adjunct Professor. FFyH, UNC. Postgraduate seminar.
- SS 2014 *Filosofía de las simulaciones computacionales*. Adjunct Professor. FFyH, UNC. Postgraduate 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

Reviewer

European Journal for Philosophy of Science - Ethics and Information Technology - Ethical Theory and Moral Practice - Philosophy & Technology - Engineering Studies - Springer (International Library of Ethics, Law and Technology) - NTM Journal of the History of Science, Technology and Medicine - Crítica - Scientific Journal Guillermo de Ockham - Science and Art of Simulation 2015 - XXV Jornadas de epistemología e historia de la ciencia; IX Encuentro AFHIC.

External Reviewer

Estonian Research Council.

Programa de Filosofía de la Ciencia. Universidad Nacional Autónoma de México.

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

- 2019 – present External advisor for the implementation of new policies and ethics in data management - *Library - Delft University of Technology*.
- 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

- 2015 – 2018 *Deputy*. Department of Philosophy and Technology of Computer Simulations. HLRS. University of Stuttgart.

Organization of Academic Events

- 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 Program committee member and chief organizer:
yearly workshop *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.

ON-LINE EDUCATION PLATFORMS

- 2015 Chair and local administrator - *Deutsches Forschungsnetz - Adobe Connect*. Used in *Workshop: The science and art of simulation*.
- 2005 – 2009 Administrator and Lecturer *e-Learning Moodle*. Used in course *Problemas epistemológicos de la psicología*. UNC. Argentina.

LANGUAGES

Spanish: Mother tongue

English: Excellent (C2)

Portuguese: Excellent (C2)

German: Good (B1)

ACADEMIC REFERENCES

References upon request

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