CURRICULUM VITAE

Dr. Rodrigo Echeveste

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sinc(i), UNL/CONICET
Santa Fe, Argentina

Place and date of birth:	*20/01/1987, Rosario, Argentina*
Nationality:	*Argentine*
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CURRENT POSITIONS

Deputy Head of sinc(i), CONICET/UNL, Santa Fe, Argentina.

Adjunct Researcher for CONICET, sinc(i), CONICET/UNL, Santa Fe, Argentina.

Adjunct Professor, FICH, UNL, Santa Fe, Argentina.

EDUCATION

Degree: Doctoral Degree in Natural Sciences (Dr. phil. Nat.), in the speciality of Physics. Grade: Magna Cum Laude. Thesis title: *"Complementary Approaches to Synaptic Plasticity: from Objective Functions to Biophysics"*. Supervisor: Prof. Dr. Claudius Gros. Institut für Theoretische Physik, Goethe Universität, Frankfurt am Main, Germany, (2016).

Degree: "Magister en Ciencias Físicas" (Master's Degree Program in Physics). Instituto Balseiro, Universidad Nacional de Cuyo, Argentina, (January 2011 – December 2011). Thesis title: "Sensory Perception in Autistic Children". Supervisor: Dr. Inés Samengo. GPA: 9.71/10, obtaining the *Prize for best student in Physics of Instituto Balseiro* (2011).

Degree: "Licenciado en Física" (equivalent to a 5 year degree course in Physics). Instituto Balseiro, Universidad Nacional de Cuyo, Argentina, (2008 – 2010). Thesis title: "Sensory Perception in Autistic Children". Supervisor: Dr. Inés Samengo. GPA: 8.4/10. Three years of "Licenciatura en Física" (First three years* of a 5 year degree course in Physics), Universidad Nacional de Rosario, Argentina, (2005 – 2008). GPA: 9.5/10. * *Instituto Balseiro demands all of it's students to complete at least 2 years in a related-field Undergraduate Course in another University before entering the Institute.*

LANGUAGES

Spanish (mother tongue), **English** (advanced), **French** (advanced), **German** (intermediate).

RESEARCH EXPERIENCE

Adjunct Researcher (Investigador Adjunto) for Argentina's National Research Council (CONICET). Place of work: sinc(i), FICH, Universidad Nacional del Litoral (UNL), Santa Fe, Argentina. (2023 – present date)

Assistant Researcher (Investigador Asistente) for Argentina's National Research Council (CONICET). Place of work: sinc(i), FICH, Universidad Nacional del Litoral (UNL), Santa Fe, Argentina. (2019 – 2023)

Repatriation Postdoctoral position granted by Argentina's National Research Council (CONICET). Place of work: sinc(i), FICH, Universidad Nacional del Litoral (UNL), Santa Fe, Argentina. Director: Diego Milone. Codirector: Inés Samengo. (2019 – 2019)

Research Associate (postdoctoral position) working with Prof. Máté Lengyel and Dr. Guillaume Hennequin at the CBL Lab, Engineering Department, University of Cambridge, UK (2016 – 2019).

Part-time Research Assistant (Wissenschaftliche Hilfskraft) working with Prof. Claudius Gros at the Institut für Theoretische Physik, Goethe Universität, Frankfurt am Main, Germany (2014 – 2016).

Research Assistant (Wissenschaftlicher Mitarbeiter) working with Prof. Claudius Gros at the Institut für Theoretische Physik, Goethe Universität, Frankfurt am Main, Germany (2012- 2014, and May 2016).

TEACHING EXPERIENCE

Adjunct Professor for Physics I and II, Facultad de Ingeniería y Ciencias Hídricas, Universidad Nacional del Litoral (2023 – present).

Professor at the 37 Escuela de Ciencias Informáticas (ECI) from Universidad de Buenos Aires. Module taught: *"NeuroIA: Modelando circuitos corticales mediante herramientas de Machine Learning".* Buenos Aires, Argentina (2024).

Lecturer for the Theoretical and Practical Tools for Research in Neuroscience course. Module taught: *"Introduction to Deep Learning applied to modelling in Neuroscience"*. Argentine Society for Neuroscience Research (SAN), (2022).

Lecturer for the Deep Learning course, Facultad de Ingeniería y Ciencias Hídricas, Universidad Nacional del Litoral (2021 – present).

Chief of practical works for Physics I and II, Facultad de Ingeniería y Ciencias Hídricas, Universidad Nacional del Litoral (2020 – 2023).

Supervisor at Pembroke College, University of Cambridge, UK. Subject: 2nd year Mathematics for Engineers (Academic years 2016-2017, 2017-2018, and 2018-2019).

Supervisor at the Department of Engineering, University of Cambridge, UK. Subject: 3rd year Introduction to Neuroscience (Lent 2017, 2018, 2019).

Tutor at the Goethe University of Frankfurt, Germany, for the subjects: *Introduction to Programming for Physicists* (October 2014 – February 2015), *Self-Organization: Theory and Simulations* (April 2014 – August 2014), *Electrodynamics* (October 2013 – February 2014, and October 2015 – February 2016), *Complex and Adaptive Dynamical Systems* (April 2013 – August 2013), *Programmierpraktikum (Java Programming Course)* (October 2012 – February 2013).

Ad Honorem Teaching Assistant at Instituto Balseiro, Universidad Nacional de Cuyo, Argentina for the course *Thermodynamics* (2011).

Teacher of the subject *Physics* at the Levelling Course for the Admission to the "Tecnicaturas Universitarias" (University Technician's Course), Instituto Politécnico Superior "General San Martín", Universidad Nacional de Rosario, Argentina (2007 - 2008).

Teaching Assistant at the Preparation Courses for the Physics Olympiads for Secondary School Students, Instituto Politécnico Superior "General San Martín", Universidad Nacional de Rosario, Argentina (2005 – 2007).

APPOINTMENTS

Deputy Head of the Research Institute for Signals, Systems and Computational Intelligence - sinc(i), UNL/CONICET, Santa Fe, Argentina. (2025 – present date)

Link between the Directive Board and the International Relations Commission of the Argentine Society for Research in Neuroscience, SAN (2025 – present date).

Link between the Directive Board and the Federalization Commission of the Argentine Society for Research in Neuroscience, SAN (2024).

Secretary of the Directive Board of the Argentine Society for Research in Neuroscience, SAN (2023 – present date).

Coordinator of the Federalization Commission of the Argentine Society for Research in Neuroscience, SAN (2022 – 2023).

Member of the Academic Senate of Instituto Balseiro, elected by the body of Undergraduate Students (2009 – 2010).

AFFILIATIONS

Academic Associate of Pembroke College (2017 – 2019).

RESEARCH GRANTS AND SCHOLARSHIPS

PICT-PRH 2022. Desarrollo de nuevas arquitecturas basadas en redes neuronales recurrentes para inferencia Bayesiana por muestreo aplicadas al modelado en neurociencia computacional. Role: Director. Ammount: $2.000.000. Code: PPICT-PRH-2022-00002 (2023-2026).

PICT INICIAL 2020. Inteligencia Artificial y Autismo: Tendiendo Puentes entre Fisiología y Percepción Sensorial. Role: Director. Ammount: $400.000. Code: PICT-2020-SERIEA-01765 (2022 - 2024).

CAI+D 2020. *"Desarrollo de métodos de aprendizaje automático para redes neuronales convolucionales en grafos con aplicaciones al análisis de imágenes"*. Role: Member. Ammount: $450.000. Code: 50620190100145LI (2021 - 2023)

ASacTei - Investigación Orientada 2019. *"Desarrollo de métodos de aprendizaje automático pararedes neuronales convolucionales en grafos, aplicadas al diagnóstico asistido del trastorno del espectro autista."* Role: Director. Ammount: $400.000. Code: IO-2019- 138 (2021-2022)

Research grant for Doctoral candidates from the German Academic Exchange Service (DAAD) with the goal of obtaining a PhD in Physics at the Goethe Universität, Frankfurt, Germany (2014 – 2016).

Full Scholarship from "Fundación YPF" to pursue Bachelor and then Master studies at Instituto Balseiro, Universidad Nacional de Cuyo, Argentina (2008 – 2011).

AWARDS AND HONORS

"150 santafesinos por Santa Fe". Acknoledgment by the Honorable City Council of Santa Fe, in its 150th anniversary, to Rodrigo Echeveste for his scientific and educational contribution to the city (2023).

Declaraction of National Interest, awarded by the Honorable Senate of Argentina, of the computational modelling with AI tools for the research of the links between physiological and perceptual processes in Autism Spectrum Disorders (ASD) developped by Drs. Rodrigo Echeveste, Diego Milone and Enzo Ferrante (Instituto de Investigación en Señales, Sistemas e Inteligencia Computacional (sinc(i), CONICET-UNL); and Dr. Inés Samengo, director of the Medical Physics Department of the Atomic Centre of Bariloche (S-0388/2022).

Declaraction of Municipal Interest, awarded by the Honorable City Council of Santa Fe to the participation of Dr. Rodrigo Echeveste in the study behind the article "Cortical-like dynamics in recurrent circuits optimized for sampling-based probabilistic inference", published in Nature Neuroscience (Dec. Nº 4268, 2020).

Prize for best student in Physics of Instituto Balseiro awarded by the Bariloche Chapter of the Argentine Association of Physics (AFA). This prize is awarded to the student with the best general average for the combined Bachelor and Master's Degree Studies in Physical Science at Instituto Balseiro (2011).

TRAVEL GRANTS

Competitive Travel Grants for Advanced PhD Students to present their work in the 2016 ELSC Annual Retreat. Kibbutz Ein Gedi, Israel (2016).

Mentorship Travel Grant Award to attend the Computational and Systems Neuroscience (COSYNE) meeting 2015. Salt Lake City, USA (2015).

PUBLICATIONS

BOOK CHAPTERS

Ferrante, E. & Echeveste R. Book: Trustworthy AI in Medical Imaging, Chapter: *Open Challenges on Fairness of Artificial Intelligence in Medical Imaging Applications*. Paperback ISBN: 9780443237614. **Elsevier** (2024).

JOURNAL PAPERS

Mansilla, L., Claucich, E., Echeveste, R., Milone, D.H., & Ferrante, E. *Demographically-Informed Prediction Discrepancy Index: Early Warnings of Demographic Biases for Unlabeled Populations*. **TMLR** (2024).

Ricci Lara, M.A., Echeveste, R., & Ferrante, E. *Addressing Fairness in Artificial Intelligence for Medical Imaging.* **Nature Communications** (2022), https://doi.org/10.1038/s41467-022-32186-3

Echeveste, R., Ferrante, E., Milone, H.D, & Samengo, I. *Bridging physiological and perceptual views of autism by means of sampling-based Bayesian inference.* **Network Neuroscience** (2021), https://doi.org/10.1162/netn_a_00219

Echeveste, R., Aitchison, L., Hennequin G., & Lengyel, M. *Cortical-like dynamics in recurrent circuits optimized for sampling-based probabilistic inference.* **Nature Neuroscience** (2020); 6 (1): 196–212. doi.org/10.1162/netn_a_00219

Tourigny, D.S., Karim, M.K.A, Echeveste, R., Kotter, M.R.N., & O'Neill, J.S. *Energetic substrate availability regulates synchronous activity in an excitatory neural network*. **PLOS ONE** (2019)

Fonseca, M., Vattuone, N., Clavero, F., Echeveste, R., & Samengo, I. *The subjective metric of remembered colors: An information-theoretical analysis of the geometry of human chromatic memory*. **PLOS ONE** (2019), 14(1), e0207992. doi:10.1371/journal.pone.0207992

Echeveste, R., & Lengyel, M. *The redemption of noise: inference with neural populations*. (invited commentary on Ma et al. Nature Neuroscience 9:1432-1438, 2006). **Trends in Neurosciences** (2018), 41(11), 767-770. doi:10.1016/j.tins.2018.09.003

Trapp, P., Echeveste, R., & Gros, C. *E-I balance emerges naturally from continuous Hebbian learning in autonomous neural networks*. **Scientific Reports** (2018), 8(1), 8939. doi:10.1038/s41598-018-27099-5

Echeveste, R., Eckmann, S., & Gros, C. *Drifting states and synchronization induced chaos in autonomous networks of excitable neurons*. **Frontiers in Computational Neuroscience** (2016), 10:98. doi: 10.3389/fncom.2016.00098

Echeveste, R., Eckmann, S., & Gros, C. *The Fisher Information as a Neural Guiding Principle for Independent Component Analysis*. **Entropy** (2015), *17*(6), 3838-3856; doi:10.3390/e17063838.

Echeveste, R., & Gros, C. *Two-trace model for spike-timing dependent synaptic plasticity.* **Neural Computation** (2015), 27 (3), 672-698. doi:10.1162/NECO_a_00707

Echeveste, R., & Gros, C. *Generating functionals for computational intelligence: the Fisher information as an objective function for self-limiting Hebbian learning rules.* **Frontiers in Robotics and AI** (2014), 1:1. doi: 10.3389/frobt.2014.00001

CONFERENCE PAPERS

Claucich E., Hooker S., Milone D.H., Ferrante E., & Echeveste R. *Fairness of Deep Ensembles: On the interplay between per-group task difficulty and under-representation.* **Proceedings of the 2025 ACM Conference on Fairness, Accountability, and Transparency, FAccT** (2025).

Ricci Lara M.A., Mosquera C., Ferrante E., & Echeveste R. Towards unraveling calibration biases in medical image analysis. **The MICCAI 2023 Workshop on Fairness of AI in Medical Imaging** (2023).

Gaggion, N., Echeveste, R., Mansilla, L., Milone, D.H., & Ferrante, E. *Unsupervised bias discovery in medical image segmentation.* **The MICCAI 2023 Workshop on Fairness of AI in Medical Imaging** (2023).

Catoni, J., & Echeveste, R. *Inferencia probabilística bayesiana bajo modelos generativos de imágenes naturales para el estudio de la percepción visual*. **IX Congreso de Matemática Aplicada, Computacional e Industrial**. ISSN: 2314-3282 (2023).

Zorzet, B., Peterson, V., Echeveste, R., & Milone, D.H. *Justicia algorítmica en BCI: influencia del preprocesamiento de señales en la discriminabilidad de atributos protegidos.* **IX Congreso de Matemática Aplicada, Computacional e Industrial**. ISSN: 2314-3282 (2023).

Claucich, E., Ferrante, E. & Echeveste, R. Sesgos en problemas de regresión originados por el desbalance de datos en términos de atributos protegidos. **XXIII Simposio Argentino de Inteligencia Artificial (ASAI 2020)-JAIIO 51** (2022), ISSN: 2451-7496.

Mansilla, L., Echeveste, Milone, D.H., & Ferrante, E. *Domain Generalization via Gradient Surgery.* **Proceedings of the IEEE/CVF International Conference on Computer Vision** (2021).

Escalas, E., Echeveste, R., Peterson, V., & Ferrante, E. *Desbalance de datos en términos de atributos protegidos: análisis de su impacto en un clasificador lineal.* **XXI Simposio Argentino de Inteligencia Artificial (ASAI 2020)-JAIIO 49** (2020), ISSN: 2451-7585.

Echeveste, R., & Gros, C. A*n objective function for self-limiting neural plasticity rules.* **ESANN 2015 Proceedings** (2015), ISBN 978-287587014-8.

Gros, C., & Echeveste, R. *The Fisher information as a guiding principle for self-organizing processes.* **Workshop on Information Theoretic Incentives for Artificial Life** (2014). p.5

THESES

PhD Thesis: *Complementary approaches to Synaptic Plasticity: from Objective Functions to Biophysics*. Supervisor: Dr. Claudius Gros. Goethe University Frankfurt, Germany (2016). Link: http://publikationen.ub.uni-frankfurt.de/frontdoor/index/index/year/2016/docId/29770

Master's Thesis: *Sensory Perception in Autistic Children*. Supervisor: Dr. Inés Samengo. Instituto Balseiro, Universidad Nacional de Cuyo, Argentina (2011). Link (in Spanish with an English abstract): http://ricabib.cab.cnea.gov.ar/316/1/1Echeveste.pdf

PEER REVIEW WORK

JOURNALS

Nature Neuroscience, Nature communications, PNAS, PLOS computational biology, Neural Networks, IEEE Transactions on Artificial Intelligence, iScience

CONFERENCES

COSYNE, Workshop on GRaphs in biomedicAl Image anaLysis – GRAIL, KHIPU, ICLR, FAIMI

ORGANIZATION AND MODERATION OF SCIENTIFIC EVENTS

Member of the Steering Committee and Head of Communications of the Latin American Meeting in Artificial Intelligence KHIPU 2025 (March 2025).

Chair together with Josefina Catoni of the "Neural Computations in the Brain: Bridging Theory and Experiments" symposium, at the XXXIX SAN Annual Meeting. Buenos Aires, Argentina (October 2024)

Member of the Steering Committe for the Latin American Meeting in Artificial Intelligence (Khipu) 2025. Santiago de Chile (March 2024 - March 2025).

Member of the organizing committee of the "2ndas Jornadas de Inteligencia Artificial del Litoral" (IA@Litoral). Santa Fe, Argentina (February 2023 - October 2023).

Chair together with Victoria Peterson of the Applied Computational Neuroscience Symposum, at the IX Congreso de Matemática Aplicada, Computacional e Industrial (MACI). Santa Fe, Argentina (May 2023)

Chair for the Symposium "NeuroTour: Un Recorrido Federal de la Neurociencia en Argentina", at the SAN XXXVII Annual Meeting. Buenos Aires, Argentina (October 2022).

Chair for the Symposium "How does the brain represent what we know (and don't know) about the world?", at the SAN XXXVI Annual Meeting. Online, Argentina (October 2021).

Organizer and moderator of sinc(i)'s online seminars. Online, Argentina (2020-present date).

Organizer and moderator of the webinar "Inteligencia Artificial en Santa Fe: La Próxima Generación", Observatorio de DEMOS. Online, Argentina (2020)

Organizer and moderator of the "CBL Journal Club", University of Cambridge, UK (2017-2019)

ADVISOR EXPERIENCE

Tatiana Eier, Internship Advisor, UNL (2025 – present date).

Carla Cañete, Internship Advisor, UNL (2024 – 2025).

Estanislao Claucich, Phd Advisor, FICH – UNL, Santa Fe (2023 – present date).

Josefina Catoni, Phd Advisor, FICH – UNL, Santa Fe (2022 – present date).

Bruno Zorzet, Phd Advisor, FICH – UNL, Santa Fe (2022 – present date).

María Agustina Ricci Lara, Phd Advisor, UTN Buenos Aires (2021 – present date).

Licenciatura de Santiago Blas, Bsc Advisor, FCEIA, UNR (2021 – 2022).

Estanislao Claucich, Internship Advisor, UNL (2021 – 2022).

Forrest Wargo, Internship Coadvisor. University of Rochester, USA (2021 – 2022).

Wayne Soo, Final Project Advisor. Department of Engineering, University of Cambridge, UK (2018 – 2019).

Philip Trapp, Msc Advisor, Goethe University of Frankfurt, Germany (2017 – 2018).

THESIS EVALUATION

Francisco Miguel Robles Moyano. Eng. Final Project. Universidad Hospital Italiano, Argentina (2025)

Elisabeth Young, Phd Thesis. Universidad Nacional de Entre Ríos, Argentina (2025).

Renato Paredes Venero. Phd Thesis. Universidad Nacional de Córdoba, Argentina (2025)

Nicolás Agustín Delmagro. Bsc Thesis. Universidad de Buenos Aires, Argentina (2024)

Lucas Diaz Celauro. Msc Thesis. Instituto Balseiro, Argentina (2023)

Lucas Diaz Celauro. Bsc Thesis. Instituto Balseiro, Argentina (2022)

Sofia Lawrie. Phd Thesis. Universidad Pompeu Fabra, Spain (2022)

Nicolas Nieto. Phd Thesis. Universidad Nacional del Litoral, Argentina (2022)

Darío Jeús Dematties. Phd Thesis Universidad de Buenos Aires, Argentina (2020)

Philip Trapp. Msc Thesis. Goethe Universität, Germany (2018)

Lukas Plogmacher. Msc Thesis. Goethe Universität Frankfurt, Germany (2017)

POSTER AND ORAL PRESENTATIONS

TALKS AND PANELS

Talk: “On being fairly (un)certain, and how (not) to assess it”. Fairness of AI in Medical Imaging - London Mini-Symposium, London, UK (June 2025).

Talk: “Equidad Algorítmica en Inteligencia Artificial: Desafíos y Dificultades”. Seminario virtual sobre IA en FAMAF, Córdoba, Argentina (online seminar, November 2024).

Talk: “Modelando circuitos corticales de visión mediante herramientas de Deep Learning.” Encuentro de Biólogos en Red, Simposio: “Explorando la sinergia entre la Inteligencia Artificial y la Investigación”. Mar del Plata, Argentina (November 2024).

Talk: “Aprendizaje automático para el modelado del procesamiento visual en la corteza cerebral”. Simposio Científico de Inteligencia Artificial y Aplicaciones (SCIAA). Buenos Aires, Argentina (November 2024).

Talk: “Machine Learning for modeling of cortical visual processing”. Institut de la Vision. Paris, Francia (June 2024).

Talk: “Machine Learning for modeling of cortical visual processing”. CBL Group Seminar. University of Cambridge, UK (June 2024).

Talk: “Machine Learning for modeling of cortical visual processing”. Gatsby Computational Neuroscience Unit Seminar. University College London (UCL), UK (June 2024).

Short course: *“Bayesian inference in the brain: linking perception to cortical circuits and dynamics”.* Junior Scientists Workshop on Recent Advances in Theoretical Neuroscience. Trieste, Italy (June 2024).

“Equidad Algorítmica en Inteligencia Artificial: Desafíos y Dificultades”. Closing seminar for the “Diplomatura en IA aplicada a la Medicina” course. Universidad Favaloro, online (December 2023).

Talk: *"Equidad Algorítmica en Inteligencia Artificial: Desafíos y Dificultades"* at the *"Sesgos de género en datos y algoritmos de Inteligencia Artificial"* panel, Congreso Nacional de Ingeniería Informática / Sistemas de Información (CoNaIISI), online (November 2023)

“Equidad Algorítmica en Inteligencia Artificial: Desafíos y Dificultades”. Inteligencia Artificial y Derecho a la Ciudad: Desafíos de la Revolución Tecnológica. Lawyers’ Bar Association of the city of Santa Fe, Argentina (October 2023)

Talk: *“IA en el Litoral”* and moderator of the panel *“Ethics and Fairness”.* 2ndas Jornadas de Inteligencia Artificial del Litoral (IA@Litoral). Santa Fe, Argentina (October 2023).

“Machine Learning for modeling of cortical visual processing”. XXXVIII Reunión Anual de la SAN. San Luis, Argentina (October 2023).

“Abordando la equidad en la inteligencia artificial para las imágenes médicas”, Sesión IA en Radiología: Generalidades y Actualización, Congreso Argentino de Diagnóstico por Imágenes (CADI) 2023. Buenos Aires, Argentina (September 2023).

Panelist at the round table *”Inteligencia Artificial: ¿Estamos listos para el Futuro?”* at La Rural in Santa Fe (May 2023)

”Modelado de la dinámica de la corteza visual primaria mediante redes neuronales entrenadas para inferencia probabilística por muestreo.” Online Seminar from the Plurinational Bayesian Community (Bayes del Sur). Online (May 2023)

”Machine Learning Aplicado al Modelado del Procesamiento Sensorial en el Cerebro.” Scientific Café organized by the Student Union of FICH-UNL. Santa Fe (April 2023)

“Machine Learning aplicado al modelado en Neurociencia: ¿Y la dinámica bien gracias?”, Colloquium of the Physics Department, Faculty of Exact Ciences, University of Buenos Aires. (November 2022).

“A bridge between physiological and perceptual views of autism by means of sampling-based Bayesian inference”, XXXVI Reunión Anual de la SAN. Online (October 2021).

“Redes Neuronales y Autismo: Tendiendo Puentes entre Fisiología y Percepción Sensorial”. SIPAIM workshop on Neuroscience and AI (online, May 2021).

“Cortical-like dynamics in recurrent circuits optimized for sampling-based probabilistic inference". Group Meeting, Theoretical Physics Group, University of Kassel, Germany (virtual seminar, February 2021).

“Cortical-like dynamics in recurrent circuits optimized for sampling-based probabilistic inference". Nagai Lab, IRCN, University of Tokio, Japan (virtual seminar, December 2020).

“Cortical-like dynamics in recurrent circuits optimized for sampling-based probabilistic inference". Moreno-Bote Journal Club, Pompeu Fabra University, Barcelona, Spain (virtual seminar, December 2020).

“Cortical-like dynamics in recurrent circuits optimized for sampling-based probabilistic inference". NeuroBioTheory Seminar, University of Frankfurt, Germany (virtual seminar, November 2020).

"Cortical-like dynamics in recurrent circuits optimized for sampling-based probabilistic inference". Theory Meetings, Kavli Institute for Systems Neuroscience, Norway (virtual seminar, August 2020).

"Modelado del sistema visual cortical optimizando redes neuronales recurrentes bajo restricciones biológicas". Seminario virtual sobre IA en FAMAF, Córdoba, Argentina (virtual seminar, August 2020).

"Dinámica cortical en circuitos recurrentes optimizados para realizar inferencia probabilística por muestreo". Seminario "Carlos Segovia Fernandez", IMAL, Santa Fe, Argentina (virtual seminar, August 2020).

"Cortical-like dynamics in recurrent circuits optimized for sampling-based probabilistic inference". Brainmap Seminar, Martinos Center, Harvard Medical School and MIT, USA (virtual seminar, August 2020).

"Webinar de la Pandemia. Y ahora ¿qué? Cuatro jóvenes interrogan el futuro." Webinar organized by Usina Social (virtual seminar, June 2020).

"Dinámica en Redes Neuronales: un ida y vuelta entre teoría y experimentos". Seminar of the Medical Physics Departament, Centro Atómico Bariloche, Bariloche, Argentina (February 2020).

"Dinámica en Redes Neuronales: un ida y vuelta entre teoría y experimentos". Seminario del Laboratorio de Cronobiología de la Universidad Nacional de Quilmes. Quilmes, Buenos Aires, Argentina (November 2019).

"Cortical-like dynamics emerge in recurrent neural networks optimized for sampling-based probabilistic inference". XXXIV Reunión Anual de la SAN. Carlos Paz, Córdoba, Argentina (October 2019).

"Cortical-like dynamics emerge in recurrent neural networks optimized for sampling-based probabilistic inference". MAFI Seminar, Babeș-Bolyai University. Cluj-Napoca, Romania (June 2019).

"Cortical-like dynamics emerge in recurrent neural networks optimized for sampling-based probabilistic inference". NeuroBioTheory Seminar, Frankfurt Institute for Advanced Studies (FIAS). Frankfurt, Germany (May 2019).

"Dinámica cortical en redes neuronales recurrentes entrenadas para realizar inferencia por muestreo bajo restricciones biológicas". Seminario del sinc(i). Santa Fe, Argentina (April 2019).

"Internally generated network dynamics for probabilistic inference: from data to theory (and back again)". Bernstein Conference 2018 Satellite Workshop "Internally generated network dynamics: experiment and theory". Berlin, Germany (September 2018).

"Synchronization in a non-uniform network of excitatory spiking neurons.". Echeveste, R., & Gros, C. American Physical Society (APS) March Meeting. Baltimore, USA (March 2016).

"An objective function for Hebbian self-limiting synaptic plasticity rules". Gros, C., Eckmann, S., & Echeveste, R. American Physical Society (APS) March Meeting. Baltimore, USA (March 2016).

"Dynamical states in the sensorimotor loop of a rolling robot". Sándor, B., Jahn, T., Martin, L., Echeveste, R., & Gros, C. American Physical Society (APS) March Meeting. Baltimore, USA (March 2016).

"Self-stabilizing Plasticity Rules derived from the Stationarity Principle of Statistical Learning". ELSC Retreat. Kibbutz Ein Gedi, Israel (January 2016).

"Complementary approaches to Computational Neuroscience: Objective Functions and Biophysics". Condensed Matter Theory Seminar, ITP, Frankfurt University. Frankfurt, Germany (November 2015).

"Complementary approaches to Synaptic Plasticity: Objective Functions and Biophysics". Cambridge University, Engineering Department, CBL. Cambridge, UK (October 2015).

"Complementary approaches to Synaptic Plasticity: Objective Functions and Biophysics". NeuroBioTheory seminar, Frankfurt Institute for Advanced Studies (FIAS). Frankfurt, Germany (January 2015).

"Asymmetric two-trace model for STDP". DPG-Frühjahrstagung (German Physical Society Meeting) 2014, Condensed Matter Section. Dresden, Germany (April 2014).

"Física y Autismo: El Rol de la Física en Problemas Tradicionalmente Reservados a Otras Disciplinas". Asociación Latina de Programación Neurolingüística y Tecnologías Afines (A.La.P.N.L.). Paraná, Entre Ríos, Argentina, (July 2011).

POSTERS

Latin American Meeting In Artificial Intelligence, Khipu, "Fairness of Deep Ensembles: On the interplay between per-group task difficulty and under-representation", Estanislao Claucich, Sara Hooker, Diego H. Milone, Enzo Ferrante, Rodrigo Echeveste. Santiago, Chile (March 2025)

Latin American Meeting In Artificial Intelligence, Khipu, "Brain Computer Interfaces and Algorithmic Fairness", Bruno J. Zorzet, Victoria Peterson, Diego H. Milone, Rodrigo Echeveste. Santiago, Chile (March 2025)

XXXIX Annual Meeting of the Argentinian Society for Neuroscience Research (SAN). "Uncertainty in latent representations of variational autoencoders optimized for visual tasks". Josefina Catoni, Domonkos Martos, Enzo Ferrante, Diego H. Milone, Ferenc Csikor, Balázs Meszéna, Gergő Orbán, Rodrigo Echeveste. Buenos Aires, Argentina (October 2024)

XXXIX Annual Meeting of the Argentinian Society for Neuroscience Research (SAN). "Exploring Demographic Biases in Deep Learning Models for Motor Imagery BCI". Bruno J. Zorzet, Victoria Peterson, Diego H. Milone, Rodrigo Echeveste. Buenos Aires, Argentina (October 2024)

2024 International Conference on Mathematical Neuroscience. "Calibrated variational inference for low-level visual perception". Josefina Catoni, Enzo Ferrante, Diego Milone, Rodrigo Echeveste. University College Dublin, Ireland (June 2024)

XXXVIII Annual Meeting of the Argentinian Society for Neuroscience Research (SAN). "Unmasking visual perception: neural-like representations emerge in artificial neural networks optimized for Bayesian probabilistic inference.". Josefina Catoni, Enzo Ferrante, Diego Milone, Rodrigo Echeveste. San Luis, Argentina (October 2023)

XXXVIII Annual Meeting of the Argentinian Society for Neuroscience Research (SAN). "Algorithmic Fairness in Brain-Computer Interfaces for Motor Imagery Detection". Bruno J. Zorzet, Diego H. Milone, Victoria Peterson, Rodrigo Echeveste. San Luis, Argentina (October 2023)

IX Congreso de Matemática Aplicada, Computacional e Industrial (MACI). "Inferencia probabilística bayesiana bajo modelos generativos de imágenes naturales para el estudio de la percepción visual". Josefina Catoni, Rodrigo Echeveste. Santa Fe, Argentina (May 2023)

Latin American Meeting In Artificial Intelligence, Khipu, "Sampling-based inference under hierarchical probabilistic models to study perception and neural dynamics in the visual cortex", Josefina Catoni, Rodrigo Echeveste. Montevideo, Uruguay (March 2023)

Latin American Meeting In Artificial Intelligence, Khipu, "Towards unraveling calibration biases in medical image analysis", María Agustina Ricci Lara, Candelaria Mosquera, Enzo Ferrante and Rodrigo Echeveste. Montevideo, Uruguay (March 2023)

Latin American Meeting In Artificial Intelligence, Khipu, “Demographically-Informed Prediction Discrepancy Index (DIPDI): Early Warnings for Biases in Unlabeled Populations”, Lucas Mansilla, Estanislao Claucich, Rodrigo Echeveste, Diego H. Milone, Enzo Ferrante. Montevideo, Uruguay (March 2023)

SNUFA Workshop 2021, “Optimizing for fast sampling-based inference yields oscillatory dynamics in a spiking model of primary visual cortex”, Zhen Chen, Forrest Wargo, Rodrigo Echeveste, Ralf Haefner. Online (November 2021).

Bernstein Conference, “A bridge between physiological and perceptual views of autism by means of sampling-based Bayesian inference”, Rodrigo Echeveste, Enzo Ferrante, Diego Milone, Inés Samengo. Online, Germany (September 2021).

Bernstein Conference, “Optimizing for fast sampling-based inference yields oscillatory dynamics in a spiking model of primary visual cortex”, Zhen Chen, Forrest Wargo, Rodrigo Echeveste, Ralf Haefner. Online, Germany (September 2021).

XXXV Annual Meeting of the Argentinian Society for Neuroscience Research (SAN), “Development of an automated tool based on medical images and graph convolutional neural networks to aid in the diagnosis of autism spectrum disorder”, Rodrigo Echeveste, Inés Samengo, Enzo Ferrante, and Diego Milone. Online, Argentina (October 2020).

Bernstein Conference, “Cortical-like dynamics in recurrent circuits optimized for sampling-based probabilistic inference”, Rodrigo Echeveste, Laurence Aitchison, Guillaume Hennequin, and Máté Lengyel. Online, Germany (September 2020).

Computational and Systems Neuroscience (COSYNE) meeting 2019, “Cortical-like dynamics in recurrent E-I networks optimized for fast probabilistic inference”, Rodrigo Echeveste, Guillaume Hennequin, Máté Lengyel. Lisbon, Portugal (February 2019).

Bernstein Conference, “Fast sampling-based probabilistic inference with non-linear recurrent neural networks under biological constraints”, Rodrigo Echeveste, Guillaume Hennequin, and Máté Lengyel. Berlin, Germany (September 2018).

Bernstein Conference, “How to train your dRagoNN: teaching neural networks probabilistic inference under biological constraints”, Rodrigo Echeveste, Guillaume Hennequin, and Máté Lengyel. Göttingen, Germany (September 2017).

Bernstein Conference, “EI balance: necessary or inevitable?”, Philp Trapp, Rodrigo Echeveste, and Claudius Gros. Göttingen, Germany (September 2017).

Computational and Systems Neuroscience (COSYNE) meeting 2017, “GSM = SSN: recurrent neural circuits optimised for probabilistic inference”, Rodrigo Echeveste, Guillaume Hennequin, Máté Lengyel. Salt Lake City, USA (February 2017).

Computational Neuroscience Society (CNS) meeting, “A simple effective model for STDP: from spike pairs and triplets to rate- encoding plasticity” Rodrigo Echeveste, and Claudius Gros. Prague, Czech Republic (July 2015).

Computational Neuroscience Society (CNS) meeting, “Should Hebbian learning be selective for negative excess kurtosis?” Claudius Gros, Samuel Eckmann, and Rodrigo Echeveste. Prague, Czech Republic (July 2015).

EITN Workshop on Learning and Plasticity, “An Objective Function for Hebbian self-stabilizing Plasticity Rules.”, Rodrigo Echeveste, Samuel Eckmann, and Claudius Gros. Paris, France (June 2015).

Osnabrück Computational Cognition Alliance Meeting (Occam) 2015, “From Stationarity to ICA: an Objective Function for Hebbian self-stabilizing Plasticity Rules.”, Rodrigo Echeveste, Samuel Eckmann, and Claudius Gros. Osnabrück, Germany (May 2015).

European Symposium on Artificial Neural Networks, Computational Intelligence and Machine Learning (ESANN) 2015, “An objective function for self-limiting neural plasticity rules.” Rodrigo Echeveste and Claudius Gros. Bruges, Belgium (April 2015).

DPG-Frühjahrstagung (German Physical Society Meeting) 2015, Condensed Matter Section, “An objective function for Hebbian self-stabilizing neural plasticity rules”, Rodrigo Echeveste and Claudius Gros. Dresden, Germany (March 2015).

Computational and Systems Neuroscience (COSYNE) meeting 2015, “Deducing Hebbian Adaption Rules from the Stationarity Principle of Statistical Learning”, Claudius Gros and Rodrigo Echeveste. Salt Lake City, USA (March 2015).

Winter School in Quantitative Systems Biology. Topic: Systems Neuroscience. Abdus Salam International Centre for Theoretical Physics (ICTP), “Two-trace model for STDP” Rodrigo Echeveste and Claudius Gros. Trieste, Italy (December 2014).

ESI Systems Neuroscience Conference (ESI-SyNC) 2014, “Learning in Neural Models driven by Objective Functions”, Rodrigo Echeveste and Claudius Gros. Frankfurt, Germany (July 2014).

Osnabrück Computational Cognition Alliance Meeting (Occam) 2014, “Two-trace model for STDP”, Rodrigo Echeveste and Claudius Gros. Osnabrück, Germany (May 2014).

DPG-Frühjahrstagung (German Physical Society Meeting) 2014, Condensed Matter Section, “Self-stabilizing Learning Rules in Neural Models driven by Objective Functions”, Rodrigo Echeveste and Claudius Gros. Dresden, Germany (April 2014).

XXVIII Congreso de la Sociedad Argentina de Investigación en Neurociencias (SAN), “Visual-memory strategies employed by children in the autistic spectrum”, Melisa Maidana Capitán, Rodrigo Echeveste, Inés Samengo. Huerta Grande, Argentina (September 2013).

Bernstein Conference 2013, “Self-stabilizing Learning Rules in Neural Models driven by Objective Functions”, Rodrigo Echeveste and Claudius Gros. Tübingen, Germany (September 2013).

Osnabrück Computational Cognition Alliance Meeting (Occam) 2013, “Learning in Neural Models driven by Objective Functions”, Rodrigo Echeveste and Claudius Gros. Osnabrück, Germany (May 2013).

Taller Regional de Física Estadística y Aplicaciones a la Materia Condensada (Trefemac), “Estrategias de memoria visual en sujetos con diagnóstico del espectro autista”, Melisa Maidana Capitán, Rodrigo Echeveste and Inés Samengo . La Plata, Argentina (May 2013).

Third EUCogIII Members Conference, “Learning in Neural Models driven by Objective Functions”, Rodrigo Echeveste and Claudius Gros. Palma de Mallorca, Spain (April 2013).

97a Reunion Nacional de la Asociacion Física Argentina (AFA), “Estrategias de memoria visual en sujetos con diagnóstico del espectro autista”, Melisa Maidana Capitán, Rodrigo Echeveste and Inés Samengo. Villa Carlos Paz, Córdoba, Argentina (September 2012).

XXVI Reunión Anual de la Sociedad Argentina de Investigación en Neurociencias (SAN), “Sensory Stimulus Categorization in Autistic Children”, Rodrigo Echeveste and Inés Samengo. Huerta Grande, Argentina (October 2011).

II Reunión Conjunta de la Asociación de Física Argentina y la Sociedad Uruguaya de Física (AFA-SUF), “Categorización de Estímulos Sensoriales en Niños Autistas”, Rodrigo Echeveste and Inés Samengo. Montevideo, Uruguay (September 2011).

ATTENDED COURSES, SCHOOLS, RETREATS, AND CONFERENCES

ADDITIONAL UNIVERSITY COURSES

Machine Learning Course from the Computational Science Degree Course at Universidad Nacional de Rosario, Argentina (March - July 2012) Grade obtained: 10 out of 10.

SCHOOLS

INCF Summer School: Information Processing in Neural Systems: From Single Neurons to Large-Scale Models of Cognition, Osnabrück, Germany (May 2015).

Winter School in Quantitative Systems Biology. Topic: Systems Neuroscience. Abdus Salam International Centre for Theoretical Physics (ICTP), Trieste, Italy (December 2014).

Winter School "Escuela de Ciencias Informáticas (ECI) 2010" del Departamento de Computación, Facultad de Ciencias Exactas y Naturales, Universidad de Buenos Aires, Buenos Aires, Argentina (July 2010). Courses taken: Reinforcement Learning, Natural Language Generation.

TRAINING COURSES

Training Course on Violence against Minors mandated by the Lucio Law (27.709) (November 2023).

Training Course on Sustainability and Environment mandated by the Yolanda Law (27.592) (May 2023).

CONFERENCES, RETREATS, WORKSHOPS, AND MEETINGS

Fairness of AI in Medical Imaging - London Mini-Symposium, London, UK (June 2025).

ACM Conference on Fairness, Accountability, and Transparency (FaccT), Athens, Greece (2025).

Latin American Meeting In Artificial Intelligence, Khipu 2025. Santiago, Chile (March 2025)

Neuro ML Symposium. Cambridge, Reino Unido (February 2025)

Encuentro de Biólogos en Red, Simposio: "Explorando la sinergia entre la Inteligencia Artificial y la Investigación". Mar del Plata, Argentina (November 2024).

Simposio Científico de Inteligencia Artificial y Aplicaciones (SCIAA). Buenos Aires, Argentina (November 2024).

XXXIX Reunión Anual de la SAN. Buenos Aires, Argentina (October 2024).

2024 International Conference on Mathematical Neuroscience. University College Dublin, Ireland (June 2024).

Junior Scientists Workshop on Recent Advances in Theoretical Neuroscience. Trieste, Italy (June 2024).

2ndas Jornadas de Inteligencia Artificial del Litoral" (IA@Litoral). Santa Fe, Argentina (October 2023).

XXXVIII Reunión Anual de la SAN. San Luis, Argentina (October 2023).

Congreso Argentino de Diagnóstico por Imágenes (CADI) 2023. Buenos Aires, Argentina (September 2023).

IX Congreso de Matemática Aplicada, Computacional e Industrial (MACI). Santa Fe, Argentina (May 2023)

Latin American Meeting In Artificial Intelligence, Khipu. Montevideo, Uruguay (March 2023)

Neurodía Computacional, Santa Fe (December 2022)

Fairness of AI in Medical Imaging Workshop, Online (October 2022)

XXXVII Reunión Anual de la SAN. Buenos Aires, Argentina (October 2022).

XXXVI Reunión Anual de la SAN. Online, Argentina (October 2021).

2021 Champalimaud Research Symposium (CRS21), Online (October 2021).

Bernstein Conference 2021. Online, Germany (September 2021).

SIPAIM workshop on Neuroscience and AI (online, May 2021).

Computational and Systems Neuroscience (COSYNE) workshop and main meeting 2021. Online (February 2021).

International Symposium on Artificial Intelligence and Brain Science. Online, Japan (October 2020).

Triangulating Intelligence: Melding Neuroscience, Psychology, and AI. Online, US (October 2020).

XXXV Reunión Anual de la SAN. Online, Argentina (October 2020).

Bernstein Conference 2020. Online, Germany (September 2020).

XXXIV Reunión Anual de la SAN. Carlos Paz, Córdoba, Argentina (October 2019).

Computational and Systems Neuroscience (COSYNE) workshop and main meeting 2019. Lisbon and Cascais, Portugal (February-March 2019).

8th Annual Cambridge Neurological Society Symposium. Topic: Neuroinflammation. Cambridge, UK (February 2019).

Bernstein Conference 2018. Berlin, Germany (September 2018).

Cambridge Memory Meeting 2018. Cambridge, UK (May 2018)

Computational and Systems Neuroscience (COSYNE) workshop and main meeting 2018. Denver and Brenckenridge, USA (March 2018).

Bernstein Conference 2017. Göttingen, Germany (September 2017).

Computational and Systems Neuroscience (COSYNE) main meeting and workshop 2017. Salt Lake City and Snowbird, USA (February 2017).

Workshop: *The state and future of probabilistic methods for modeling brain functions*. Budapest, Hungary (September 2016).

American Physical Society (APS) March Meeting. Baltimore, USA (March 2016).

ELSC Retreat. Kibbutz Ein Gedi, Israel (January 2016).

Computational Neuroscience Society (CNS) meeting. Prague, Czech Republic (July 2015).

EITN Workshop on Learning and Plasticity. Paris, France (June 2015).

Osnabrück Computational Cognition Alliance Meeting (Occam) 2015. Osnabrück, Germany (May 2015).

European Symposium on Artificial Neural Networks, Computational Intelligence and Machine Learning (ESANN) 2015. Bruges, Belgium (April 2015).

DPG-Frühjahrstagung (German Physical Society Meeting) 2015. Condensed Matter Section, Dresden, Germany (March 2015).

Computational and Systems Neuroscience (COSYNE) meeting 2015. Salt Lake City, USA (March 2015).

ESI Systems Neuroscience Conference (ESI-SyNC) 2014. Frankfurt, Germany (July 2014).

Osnabrück Computational Cognition Alliance Meeting (Occam) 2014. Osnabrück, Germany (May 2014).

DPG-Frühjahrstagung (German Physical Society Meeting) 2014, Condensed Matter Section. Dresden, Germany (April 2014).

INS conference: “The Dynamic Brain”. Marseille, France (November 2013).

Bernstein Conference 2013. Tübingen, Germany (September 2013).

Osnabrück Computational Cognition Alliance Meeting (Occam) 2013. Osnabrück, Germany (May 2013).

Third EUCogIII Members Conference. Palma de Mallorca, Spain (April 2013).

XXVI Reunión Anual de la SAN, Huerta Grande, Córdoba, Argentina (October 2011).

II Reunión Conjunta de la Asociación de Física Argentina y la Sociedad Uruguaya de Física (AFA-SUF), Montevideo, Uruguay (September 2011).

Segunda Reunión Conjunta de Neurociencias (IIRCN): XXV Reunión Anual de la Sociedad Argentina de Investigación en Neurociencias (SAN) y XII Taller Argentino de Neurociencias (TAN). Huerta Grande, Córdoba, Argentina (October 2010).

Course "Physics and Neuroscience: heading towards quantitative biology”. Huerta Grande, Córdoba, Argentina (October 2010).

95° Reunión de la Asociación de Física Argentina (AFA). Malargüe, Mendoza, Argentina (September 2010).

“XXIV International Conference on Photonic, Electronic and Atomic Collisions”. Rosario, Santa Fe, Argentina (July 2005).

Santa Fe, Argentina, August 2025.