

Marcos Daniel Zárate

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Short Bio

Research assistant at Centre for the Study of Marine Systems ([CESIMAR](#)) Patagonian National Research Centre (CENPAT-CONICET). Data manager at [ArOBIS](#), associated node of Ocean Biodiversity Information System. Teaching assistant at National University of Patagonia San Juan Bosco. I've been working in CESIMAR since April 2015. My general research interest is develop solutions for the design of high quality Oceanographic information systems based on Semantic Web technologies.

Research Interests

- Applications of Semantic Web technologies for Oceanography and marine Biodiversity.
- Knowledge Graphs.
- Knowledge representation.
- Semantic representation of biodiversity data.
- Development of domain specific ontologies.

Education

- 2015–2019 PhD in Computer Science, National University of the South (UNS), Argentina.
Thesis title: Alineamiento e integración de información basada en ontologías para biogeografía marina y biodiversidad. Supervisors: PhD. Pablo Fillottrani and PhD. Claudio Delrieux. URL: [Thesis document](#)
- 2002–2006 B.Sc., Computer Science, National University of Patagonia San Juan Bosco, Argentina

Teaching Assistant

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| 2015-Now | Algorithms and programming II | National University of Patagonia San Juan Bosco, Argentina |
| 2011-2019 | Computer Science I | Escuela N° 789 (secondary education), Argentina |
| 2013-2014 | Computer Science & Technology | Escuela N° 7701 (secondary education), Argentina |

Academic Supervision Activity

- 2019 Bachelor of Science in Computer Science: Hugo Donato, thesis defended on 12 November 2020.

Selected Honours and Awards

- 2020–2022 National Scientific and Technical Research Council (CONICET), Postdoctoral fellowship.
- 2019 [Young Researcher Award 2019](#): Award of 5000 € awarded by GBIF to Young Researchers that encourage innovation in the use and mobilization of shared biodiversity data through the GBIF network.
- 2015–2020 National Scientific and Technical Research Council (CONICET), PhD. Studentship.

Travel Grants

- Dic 2019 [SNDB Georreferenciación de registros biológicos](#). Buenos Aires - Argentina. Amount: 15.000 Argentine pesos to cover travel and accommodation costs.
- Nov 2017 [OTGA/INVERMAR Training Cours: Digital Repositories: the pathway from Open Access to Digital Asset Management](#). Santa Marta - Colombia. Amount: 500 dollars to cover travel and accommodation costs.
- Aug 2016 [First Argentina-US Ocean Data Stewardship and Management Meeting](#). Mar del Plata - Argentina. Amount: 10.000 Argentine pesos to cover travel and accommodation costs.
- Nov 2015 [Workshop Big Data and Environment](#). Buenos Aires - Argentina. Amount: 2.875 Argentine pesos to cover accommodation costs.
- Jun 2015 [III Jornadas de Cloud Computing & Big Data \(JCC&BD\)](#). La Plata - Argentina. Amount: 8.000 Argentine pesos to cover travel and accommodation costs.

Publications

Published Journal Articles

- [1] Dans, S., Cefarelli, A., Galvan, S., **Zárate, M.** (2021). El Golfo San Jorge Como Área Prioritaria de Investigación, Manejo Y Conservación en el Marco de la Iniciativa Pampa Azul. Ciencia e Investigación; Ciudad Autónoma de Buenos Aires; vol. 71 p. 21 - 43. ISSN: 0009-6733
- [2] **Zárate, M.**, Braun G., Lewis, M. & Fillottrani P. (2021). Observational/Hydrographic data of the South Atlantic Ocean published as LOD. Semantic Web Journal. DOI: [10.3233/SW-210426](#)
- [3] **Zárate, M.**, Braun G., Fillottrani P., Delrieux C., & Lewis, M. (2020). BiGe-Onto: An Ontology-Based System for Managing Biodiversity and Biogeography Data. Applied Ontology Journal. DOI: [10.3233/AO-200228](#)
- [4] Snowden, Derrick P, Tsonotos, Vardis, Handegard, Nils Olav, **Zárate, M.**, O'Brien, Kevin M, Casey, Kenneth S, Smith, Neville, Sagen, Helge, Bailey, Kathleen, Lewis, Mirtha and others (2019). Data Interoperability Between Elements of the Global Ocean Observing System. Frontiers in Marine Science, 6, 442. DOI: [10.3389/fmars.2019.00442](#)
- [5] **Zárate, M.**, Buckle, C., Mazzanti, R., Samec, G. (2019). Improving Open Science Using Linked Open Data: CONICET Digital Use Case. Journal of Computer Science & Technology, 19, 45–54. DOI: [10.24215/16666038.19.e05](#)
- [6] **Zárate, M.**, Lewis, M. (2016). Estimate of the Anesthesia Stage in Southern Elephant Seals using WEKA Data Mining Tool. International Journal of Applied Information Systems (IJ AIS), 11(4):48-52, DOI: [10.5120/ijais2016451603](#)

Chapters in books

- [1] **Zárate, M.**, Buckle, C. (2021). LOBD: Linked Data Dashboard for Marine Biodiversity. In: Cloud Computing, Big Data & Emerging Topics 9th Conference, JCC-BD&ET 2021, La Plata, Argentina, July 8-10, 2021, Proceedings. Communications in Computer and Information Science, vol 1444. Springer, Cham. DOI: [10.1007/978-3-030-84825-5_11](https://doi.org/10.1007/978-3-030-84825-5_11)
- [2] **Zárate, M.**, Buckle, C., Mazzanti, R., Lewis, M., Fillottrani, P., & Delrieux, C. (2020). Harmonizing Big Data with a Knowledge Graph: OceanGraph KG Uses Case. In: Cloud Computing, Big Data & Emerging Topics 8th Conference, JCC-BD&ET 2020, La Plata, Argentina, September 8-10, 2020, Proceedings. Communications in Computer and Information Science, vol 1291. Springer, Cham. DOI: [10.1007/978-3-030-61218-4_6](https://doi.org/10.1007/978-3-030-61218-4_6)
- [3] **Zárate, M.**, Rosales, P., Braun, G., Lewis, M., Fillottrani, P., & Delrieux, C. (2019). OceanGraph: Some Initial Steps Toward a Oceanographic Knowledge Graph. In: Villazón-Terrazas B., Hidalgo-Delgado Y. (eds) Knowledge Graphs and Semantic Web. KGSWC 2019. Communications in Computer and Information Science, vol 1029. Springer, Cham. DOI: [10.1007/978-3-030-21395-4_3](https://doi.org/10.1007/978-3-030-21395-4_3)

Conferences

- [1] **Zárate, M.**, Zermoglio, P., Wiczorek, J., Plos, A., & Mazzanti, R. (2020). Linked Open Biodiversity Data (LOBD): A semantic application for integrating biodiversity information, TDWG 2020 Annual Conference. Virtual Conference. DOI: [10.3897/biss.4.58975](https://doi.org/10.3897/biss.4.58975)
- [2] **Zárate, M.**, Rosales, P., Fillottrani, P., Delrieux, C., & Lewis, M. (2018). Oceanographic Data Management: Towards the Publishing of Argentine Oceanographic Campaigns as Linked Data, 12th Alberto Mendelzon International Workshop on Foundations of Data Management. Cali, Colombia: URL: ceur-ws.org/Vol-2100/paper-20
- [3] **Zárate, M.**, Braun, G., & Fillottrani, P. (2017). Adding Biodiversity Datasets from Argentinian Patagonia to the Web of Data, 2nd International Workshop on Semantics for Biodiversity co-located with 16th International Semantic Web Conference 2017. Vienna, Austria: URL: ceur-ws.org/Vol-1933/paper-6
- [4] **Zárate, M.**, Buccella, A., & Fillottrani, P. (2017). BioOnto: Towards an Integration of Biological and Biogeographic Data, 16th Joint Ontology Workshops 2017, Bozen-Bolzano, Italy. URL: ceur-ws.org/Vol-2050/ODLS-paper-6
- [5] **Zárate, M.**, Braun, G., & Almonacid, S. (2017). Transforming Biodiversity Data in Linked Data, 19th Workshop of Researchers in Computer Science, Buenos Aires, Argentina. URL: [ISBN-978-987-42-5143-5](https://doi.org/10.1007/978-987-42-5143-5)
- [6] **Zárate, M.**, Lewis, M. (2016). Estimación del Plano Anestésico en Elefante Marinos del Sur Utilizando Técnicas de Machine Learning, 12th Argentine Congress of Computer Science, San Luis, Argentina. URL: sedici.unlp.edu.ar/handle/10915/56749

Posters

- [1] **Zárate, M.** & Lewis, M. (2020). Manejo integrado de campañas oceanográficas del Golfo San Jorge a través de datos abiertos enlazados. VI Seminario Golfo San Jorge, 9 septiembre 2019, CONICET-CENPAT, Puerto Madryn, Argentina, [ISSN 2618-5334](https://doi.org/10.1007/978-3-030-21395-4_3).
- [2] **Zárate, M.**, Lewis, M., Fillottrani, P. & Delrieux, C. (2018). Improving the Quality of Biodiversity Data Through Semantic Web Standards, 10th International Conference on Ecological Informatics (pp. 245–246). Jena, Germany. URL: [Proceedings](https://doi.org/10.1007/978-3-030-21395-4_3)

- [3] **Zárate, M.**, Braun, G., & Fillottrani, P. (2017). Adding Biodiversity Datasets from Argentinian Patagonia to the Web of Data, 16th International Semantic Web Conference 2017 (pp. 434–441). Vienna, Austria. URL: ceur-ws.org/Vol-1963/paper584

Contributed Presentations

- [1] Nunez, G., Buckle, C., & **Zárate, M.** (2022). Visual Analytics for Linked Open Data in Marine Sciences. In X Jornadas de Cloud Computing, Big Data & Emerging Topics (La Plata, 2022). URL: <http://sedici.unlp.edu.ar/handle/10915/140643>
- [2] Buckle, C., **Zárate, M.**, Mazzanti, R., Delrieux, C. & Lewis, M. (2020). Plataforma de Datos Abiertos Enlazados para la Gestión y Visualización de Datos Primarios de Ciencias del Mar, 22th Workshop of Researchers in Computer Science, El Calafate, Argentina. ISBN 978-987-3714-82-5.
- [3] Samec, G., Diez Maria E., **Zárate, M.**, Buckle, C., Lima, J., Jaramillo, R., & Mazzanti, R., (2020). Herramientas Informáticas para el Estudio de la Biodiversidad utilizando Datos Abiertos Enlazados, 22th Workshop of Researchers in Computer Science, El Calafate, Argentina. ISBN 978-987-3714-82-5.
- [4] Buckle, C., **Zárate, M.**, Ordinez, L. & Barry, D. (2019). Grafos y temporalidad en bases de datos: una aplicación sobre datos abiertos enlazados, 25th Argentine Congress of Computer Science, Rio Cuarto, Argentina. ISBN 978-987-688-377-1
- [5] Samec, G., Diez Maria E., **Zárate, M.**, Buckle, C., Lima, J., Jaramillo, R., Sanchez A., & Mazzanti, R., (2019). Aplicaciones Informáticas para el Estudio de Biodiversidad de Poliquetos Espiñonidos en los Golfos Nordpatagónicos, 21th Workshop of Researchers in Computer Science, San Juan, Argentina. ISBN 978-987-3984-85-3
- [6] Mazzanti, R., **Zárate, M.**, Samec, G., Buckle, C. (2018). Integración de repositorios semánticos: un camino hacia los datos abiertos enlazados , 8th BIREDIAL ISTECS 2018 Conference, Lima, Peru. URL: [Proceedings](#)
- [7] Mazzanti, R., **Zárate, M.**, Samec, G., Buckle, C. (2018). Infraestructura de Acceso a Datos Primarios con Aporte de Semántica en Repositorios Digitales , 20th Workshop of Researchers in Computer Science, Buenos Aires, Argentina. ISBN 978-987-3619-27-4
- [8] Delrieux, C., Barry, D., Stickar, R. Mazzanti, R. Buckle, C. Cura, R. & **Zárate, M.** (2015). Clasificación de información en BigData mediante la utilización de técnicas de inteligencia artificial y análisis de redes sociales, 17th Workshop of Researchers in Computer Science, Salta, Argentina, ISBN-978-987-42-5143-5

Research Projects

2022–2024 (80020210200004UP) *Extracción y explotación de conocimiento para la gestión en línea de datos en ciencias del mar*. Funded by the secretary of science and technology UNPSJB. Director: Marcos Zárate.

2020–2021 (CHU-09) *Análisis prospectivo inteligente del impacto social, económico y productivo del COVID-19 en la provincia de Chubut*. Funded by Programa de articulación y fortalecimiento federal de las capacidades en ciencia y tecnología COVID-19. Directora: Maria Florencia del Castillo.

2020–2022 (PI-80020190100009UP) *Plataforma de datos abiertos enlazados para la gestión y visualización de datos primarios de ciencias del mar*. Funded by the secretary of science and technology UNPSJB. Director: Carlos Buckle.

2019–2022 PGI/UNS *Semantic Technologies for Access and Data Integration*, Funded by Universidad Nacional del Sur. Director: PhD. Pablo R. Fillottrani.

2019–2021 (PI-80020180100024UP) *Informatic applications to study of biodiversity of spionid polychaetes in North Patagonian Gulfs*. Funded by the secretary of science and technology UNPSJB. Director: Renato Mazzanti.

2018–2020 (PI-80020170100004UP) *An infrastructure for primary data access with semantic in digital repositories*. Funded by the secretary of science and technology UNPSJB. Director: Carlos Buckle.

2015–2018 PGI-UNS (24/N038) *Interoperabilidad Semántica: aplicaciones para la Web y E-Gobierno*. Funded by Departamento de Ciencias e Ingeniería de la Computación. Universidad Nacional del Sur (UNS). Director: PhD. Pablo R. Fillottrani.

2015–2017 FI_038/14 *Clasificación de información en big data mediante la utilización de técnicas de inteligencia artificial y análisis de redes sociales*. Funded by the secretary of science and technology UNPSJB. Director: PhD Claudio Delrieux.