

CURRICULUM VITAE

Mónica Alejandra Caniupán Marileo

Full Professor
Universidad del Bío-Bío
Concepción-Chile

April 4, 2024

1 Personal Information

- Place of Birth: Concepción, Chile (1975).
- Citizenship: Chilean.
- Email: mcaniupan@ubiobio.cl
- Address: Avenida Ignacio Collao 1202, Concepción, Chile.
- Phone: +56 41 3111526.
- Languages: Spanish, English.

2 Studies

Carleton University, Ottawa, Canada

- Ph.D in Computer Science, 2007.
Thesis: *Optimizing and Implementing Repair Programs for Consistent Query Answering in Databases*.
Advisor: Dr. Leopoldo Bertossi.

Universidad del Bío-Bío (UBB), Concepción, Chile

- Civil Engineering in Informatics, 2000.
Thesis: *Applying Data Mining in the Academic Area*.
Advisor: Prof. Luis Contreras.
- Bachelor in Science of Engineering Informatics (four years curriculum in Computer Science), 1998.

3 Scholarships

1. (2002-2006) Scholarship at Carleton University for International Students, Ottawa, Canada. Used to study in the PhD Program on Computer Science.
2. (2001-2002) MECESUP (Education Ministry of Chile and Universidad Católica de Chile) for graduate studies. Used to study one and half years in the PhD Program on Computer Science, Santiago, Chile.
3. (1994-1999) MINEDUC (Education Ministry of Chile) for undergraduate studies. Used to study Computer Engineering at UBB, Concepción, Chile.

4 Honors

1. Recognition for the contribution to science, technology, knowledge and innovation of the Bío-Bío Region. Seremi de Ciencias, South Macrozone, 2024.
2. Winner of the Women's Innovation Fund UBB-2022, INES Gender Project, 2022.
3. Relevant Teaching, UBB, 2010.
4. Young leader of Región del Bío-Bío, Diario el Sur, 2007.

5 Research Projects

1. *Extended Spatial Map Algebra on Compact Data Structures*. ANID, FONDECYT, number 1230647, 2023-2026, co-researcher.
2. *Information Technologies and their use in Security Systems*. Women Innovation Projects 2022, UBB, code I+D INESGEN 22-88, 2022-2023, principal researcher.
3. *Research Group Algorithms and Databases (ALBA)*. UBB, code 2130591 GI/VC, 2021-2022, co-researcher.
4. *Co-building an ecosystem for digital transformation and territorial development of the Biobío and Ñuble Regions*. UBB, code INES I+D 22-14, 2022-2024, co-researcher.
5. *Consolidation of an International Network in the Area of Automated Information Treatment in the Central-South Macrozone*. ANID, code FOVI210012, 2022-2023, co-researcher.
6. *Compact Data Structures to Represent Spatial Datasets in Secondary Memory*. UBB, code 2130520 IF/R, 2021-2022, co-researcher.
7. *Compact Data Structures to Represent and Query Large Spatial and Spatio-Temporal Datasets*. UBB, code 2030228 IF/R, 2020-2021, principal researcher.
8. *Research Group Algorithms and Databases (ALBA)*. UBB, code 195119 GI/VC, 2019-2020, co-researcher.
9. *Algorithms to Integrate and Process Raster and Vectorial Data Sets on Compact Data Structures*. UBB, code 181315 3/R, 2018-2019, principal researcher.
10. *Compact Data Structures to Represent and Querying Large Spatial Data Sets*. UBB, code 171319 4/R, 2017-2018, co-researcher.
11. *Compact Data Structures to Process Large Collections of Spatial and Spatio-Temporal Data*, Exploratory Project - Engineering 2030. UBB, code 1638, 2016-2017, principal researcher.
12. *Research Group Algorithms and Databases (ALBA)*. UBB, code 160119 GI/EF, 2016-2017, principal researcher.
13. *Research Group Databases*. UBB, code 132019 GI/EF, 2014-2015, co-researcher.
14. *Formalization and Implementation of Queries over Trajectories on Spatial and Temporal Databases*. UBB, code 140515 3/R, 2014-2016, principal researcher.
15. *Fraud Detection System to Cash Machines based on Neuronal Networks*. FONDEF VIU-CONICYT, code VIU 130055, 2013-2014, co-researcher.
16. *Enhancement of the Areas of Information Retrieval and Database*. MEC-CONICYT, code 80120043, 2013, principal researcher.

17. *Algorithms to Compute Dimensions Repairs in Data Warehouses*. UBB, code 110115 2/R, 2011-2012, principal researcher.
18. *Semantically Correct Answers to Queries in Inconsistent Multidimensional Databases*. FONDECYT-CONICYT, code 11070186, 2007-2009, principal researcher.
19. *Optimizing and Implementing Repair Programs for Consistent Query Answering in Inconsistent Databases*. UBB, code 076215 4/R, 2006-2007, principal researcher.

6 Publications

Journal Articles (WoS)

1. G. Gutiérrez, R. Torres-Avilés, M. Caniupán. *cKd-tree: A Compact Kd-tree*. IEEE Access, vol. 12, pp. 28666-28676, 2024, <https://ieeexplore.ieee.org/document/10431741>.
2. A. Cravero, S. Pardo, P. Galeas, J. López, M. Caniupán. *Data Type and Data Sources for Agricultural Big Data and Machine Learning*. Sustainability, vol. 14(23), article number 16131, 2022. <https://www.mdpi.com/2071-1050/14/23/16131>
3. M. Caniupán, R. Torres-Avilés, T. Gutiérrez-Bunster, M. Lepe. *Efficient Computation of Map Algebra over Raster Data stored in the k^2 -acc Compact Data Structure*. GeoInformatica, 26:95-123, 2022. <https://rdcu.be/cpQCW>, <https://doi.org/10.1007/s10707-021-00445-y>
4. F. Santolaya, M. Caniupán, L. Gajardo, M. Romero, R. Torres-Avilés. *Efficient Computation of Spatial Queries over Points Stored in k^2 -tree Compact Data Structures*. Theoretical Computer Science, 892:108-131, 2021. <https://doi.org/10.1016/j.tcs.2021.09.012>
5. J. Castro, M. Romero, G. Gutiérrez, M. Caniupán, C. Quijada-Fuentes. *Efficient Computation of the Convex Hull on Sets of Points Stored in a k^2 -tree Compact Data Structure*. Knowledge and Information Systems, ISSN 0219-1377, 62(10):4091-4111, 2020. <https://doi.org/10.1007/s10115-020-01486-9>
6. C. Vallejos, M. Caniupán, G. Gutiérrez. *Compact Data Structures to Represent and Query Data Warehouses into Main Memory*. IEEE Latin America Transactions, 16(9):2328-2335, 2018. <https://www.inaoep.mx/~IEEElat/index.php/transactions/article/view/7/5>, <https://doi.org/10.1109/TLA.2018.8789552>
7. M. Caniupán, A. Vaisman, R. Arredondo. *Efficient Repair of Dimension Hierarchies under Inconsistent Reclassification*. Data & Knowledge Engineering, 95:1-22, 2015. <http://dx.doi.org/10.1016/j.datak.2015.01.001>
8. A. Rodríguez, L. Bertossi, M. Caniupán. *Consistent Query Answering under Spatial Semantic Constraints*. Information Systems, 38:244-263, 2013. <http://dx.doi.org/10.1016/j.is.2012.08.005>
9. M. Caniupán, L. Bravo, C.A. Hurtado. *Repairing Inconsistent Dimensions in Data Warehouses*. Data & Knowledge Engineering, 79(80):17-39, 2012. <http://dx.doi.org/10.1016/j.datak.2012.04.002>
10. M. Caniupán, L. Bertossi. The consistency extractor system: Answer set programs for consistent query answering in databases. Data & Knowledge Engineering, 69(6):545-572, 2010. <http://dx.doi.org/10.1016/j.datak.2010.01.005>
11. M. Caniupán. *Handling Inconsistencies in Data Warehouses*. In Current Trends in Database Technology, LNCS 3268, pp. 166-176, 2004. https://link.springer.com/chapter/10.1007/978-3-540-30192-9_16

International Conferences/Workshops Articles

1. M. Caniupán, L. Galleguillos, T. Gutiérrez-Bunster, K. Prats, A. Segura, B. Troncoso. *Analysis of the Perception of Security at the Concepción campus of Universidad del Bío-Bío*. In Proc. of the XV Congress of Latin American Women in Computing, pp. 23-33, La Paz, Bolivia, October 16-20, 2023. <https://ceur-ws.org/Vol-3607/paper3.pdf>
2. O. Plaza de los Reyes, M. Caniupán, R. Torres-Avilés, T. Gutiérrez-Bunster. *Map algebra algorithms over raster data stored in the k^2 -raster compact data structure*. In Proc. of the XLI International Conference of the Chilean Computer Science Society (SCCC'22), pp. 1-4, Santiago, Chile, November 21-25, 2022. <https://ieeexplore.ieee.org/document/10000323>
3. L. Cabrera-Crot, M. Caniupán, A. Rodríguez, D. Seco. *Trajectory Patterns Based on Segment-Cutting Clustering*. In Proc. of the 13th Alberto Mendelzon International Workshop on Foundations of Data Management (AMW'19), vol. 2369, Asunción, Paraguay, June 03-07, 2019. <http://ceur-ws.org/Vol-2369/paper02.pdf>
4. F. Linco, M. Caniupán. *Extending the CMHD Compact Data Structure to Compute Aggregations over Data Warehouses*. In Proc. of the 37th International Conference of the Chilean Computer Science Society (SCCC'18), pp. 1-8, Santiago, Chile, November 5-9, 2018. <https://ieeexplore.ieee.org/document/8705230>
5. C. Vallejos, M. Caniupán, G. Gutiérrez. *K^2 -treaps to Represent and Query Data Warehouses into Main Memory*. In Proc. of the 36th International Conference of the Chilean Computer Science Society (SCCC'17), pp. 1-12, Arica, Chile, October 16-18, 2017. <https://ieeexplore.ieee.org/document/8405133>
6. J. Ramírez, M. Caniupán, L. Bravo. *Handling Inconsistencies in Data Warehouses with Extended Dimensions*. In Proc. of the XXXII International Conference of the Chilean Computer Science Society (SCCC'13), Temuco, Chile, November 11-15, 2013.
7. R. Arredondo, M. Caniupán. *Efficient Algorithms for Repairing Inconsistent Dimensions in Data Warehouses*. In Proc. of the XXXII International Conference of the Chilean Computer Science Society (SCCC'13), Temuco, Chile, November 11-15, 2013.
8. J. Ramírez, L. Bravo, M. Caniupán. *Extended Dimensions for Cleaning and Querying Inconsistent Data Warehouses*. In Proc. of the ACM Sixteenth International Workshop On Data Warehousing and OLAP (DOLAP'2013), pp. 39-46, San Francisco Airport Marriot Waterfront, Burlingame, CA, USA, October 28th, 2013. <https://dl.acm.org/doi/10.1145/2513190.2513193>
9. M. Caniupán, A. Placencia. *Data Warehouse Fixer: Fixing Inconsistencies in Data Warehouses*. In Proc. of the XXX International Conference of the Chilean Computer Science Society (SCCC'2011), pp. 28-32, Curicó, Chile, November 9-11, 2011. <https://ieeexplore.ieee.org/document/6363379>
10. J. Belmar, J. Cuevas, M. Caniupán. *CQA-WF: Consistent Query Answers to Conjunctive Queries using the Well-Founded Semantics*. In Proc. of the XXX International Conference of the Chilean Computer Science Society (SCCC'2011), pp. 54-63, Curicó, Chile, November 9-11, 2011. <https://ieeexplore.ieee.org/document/6363383>
11. M. Caniupán, A. Vaisman. *Repairing Dimension Hierarchies under Inconsistent Reclassification*. In Proc. of Advances in Conceptual Modeling, Recent Developments and New Directions. LNCS 6999, pp. 75-85, Brussels, Belgium, November, 2011. https://link.springer.com/chapter/10.1007/978-3-642-24574-9_11

12. L. Bravo, M. Caniupán, C. Hurtado. *Logic Programs for Repairing Inconsistent Dimensions in Data Warehouses*. In CEUR Proc. of the IV Alberto Mendelzon International Workshop on Foundations of Data Management (AMW'10), Vol. 619, pp. 1-12, Buenos Aires, Argentina, May 17- 20, 2010.
13. L. Bertossi, L. Bravo, M. Caniupán. *Consistent Query Answering in Data Warehouses*. In CEUR Proc. of the III Alberto Mendelzon International Workshop on Foundations of Data Management (AMW'09), Vol. 450, Arequipa, Perú, May 12-15, 2009.
<http://citeseerx.ist.psu.edu/viewdoc/summary?doi=10.1.1.159.4989>
14. A. Rodriguez, L. Bertossi, M. Caniupán. *An Inconsistency Tolerant Approach to Querying Spatial Databases*. In Proc. of the 16th ACM SIGSPATIAL International conference on Advances in Geographic Information Systems (ACM GIS'08), p.36, Irvine, California, USA, November 2008.
<https://dl.acm.org/doi/10.1145/1463434.1463480>
15. M. Caniupán, L. Bertossi. *The Consistency Extractor System: Querying Inconsistent Databases using Answer Set Programs*. In Proc. of the Scalable Uncertainty Management Conference (SUM'07), LNCS 4772, pp. 74-88, Washington DC, October, USA, 2007.
https://link.springer.com/chapter/10.1007/978-3-540-75410-7_6
16. M. Caniupán, L. Bertossi. *Optimizing Repair Programs for Consistent Query Answering*. In Proc. of the International Conference of the Chilean Computer Science Society (SCCC'05), IEEE Computer Society Press, pp. 3-12, Punta Arenas, November, Chile, 2005.
<https://ieeexplore.ieee.org/document/1587860?anchor=authors>
17. M. Caniupán, G. Toro. *Applying Data Mining in the Academic Area* (in Spanish). In Proc. of the Software Engineering and Knowledge Engineering Workshop, pp. 121-126, Buenos Aires, Argentina, June 2001.

Books

1. M. Caniupán. *Optimizing and Implementing Repair Programs for Consistent Query Answering in Databases*. LAP Lambert Academic Publishing GmbH & Co. KG ISBN 978-3-8443-9312-5, Germany, 2011.

PhD Thesis

1. M. Caniupán. *Optimizing and Implementing Repair Programs for Consistent Query Answering in Databases*. Ph.D. Thesis at Carleton University, Ottawa, Canada, 2007.
(<http://dsi.face.ubiobio.cl/mcaniupan/publications.html>)

National Journal Articles

1. A. Pérez, E. Grandón, M. Caniupán, G. Vargas. *Comparative Analysis of Prediction Techniques to Determine Student Dropout: Logistic Regression vs Decision Trees*. In XIX Chilean Workshop of TICS for Education (TICXED 2018), in conjunction with the 37th International Conference of the Chilean Computer Science Society (SCCC'18), pp. 1-8, Santiago, Chile, November 5-9, 2018.
<https://ieeexplore.ieee.org/document/8705262>
2. J. Belmar, J. Cuevas, M. Caniupán. *CQA-WF: Consistent Query Answers to Conjunctive Queries using the Well-Founded Semantics* (in Spanish). In the XXIII Chilean Workshop on Computation, Curicó, Chile, November 9-11, 2011.
3. V. Beratto, G. Osses, M. Caniupán. *DATASQL: Translating DATALOG Queries into SQL Queries* (in Spanish). In the Information System Department Magazine (“Revista de Divulgación de las Ciencias Computacionales, Informática y de las Comunicaciones”), Vol. 2, Number 1, pp. 7-20, 2009.

4. M. Caniupán. *Disjunctive Logic Programs to Compute Consistent Answers to Queries from Inconsistent Databases* (in Spanish). In the Information System Department Magazine (“Revista de Divulgación de las Ciencias Computacionales, Informática y de las Comunicaciones”), Vol. 1, Number 1, pp. 71-84, 2008.

7 Talks and Seminars

International Events

1. *Extending the CMHD Compact Data Structure to Compute Aggregations over Data Warehouses*. In the 37th International Conference of the Chilean Computer Science Society (SCCC’18), Santiago, Chile, November 5-9, 2018.
2. *K²-treaps to Represent and Query Data Warehouses into Main Memory*. In the 36th International Conference of the Chilean Computer Science Society (SCCC’17), Arica, Chile, October 16-18, 2017.
3. *Handling Inconsistencies in Data Warehouses with Extended Dimensions*. In the XXXII International Conference of the Chilean Computer Science Society (SCCC’13), Temuco, Chile, November, 2013.
4. *Efficient Algorithms for Repairing Inconsistent Dimensions in Data Warehouses*. In the XXXII International Conference of the Chilean Computer Science Society (SCCC’13), Temuco, Chile, November 11-15, 2013.
5. *Data Warehouse Fixer: Fixing Inconsistencies in Data Warehouses*. In the XXX International Conference of the Chilean Computer Science Society (SCCC’11), Curicó, Chile, November 9-11, 2011.
6. *Repairing Dimension Hierarchies under Inconsistent Reclassification*. In MORE Business Intelligence Workshop, the 1st International Workshop on Modeling and Reasoning for Business Intelligence, in conjunction with the 30th International Conference on Conceptual Modeling (ER’11), Brussels, Belgium, November 2011.
7. *Consistent Query Answering in Data Warehouses*. In Workshop on Foundations of Data Management and the Web (AMW’09), Arequipa, Perú, May 12-15, 2009.
8. *Logic Programs for Computing Consistent Answers to Aggregate Queries*. In the Research Seminar, Institute of Computation, Universidad de la República, Montevideo, Uruguay, September 11, 2008.
9. *Handling Inconsistencies in Multidimensional Data Warehouses*. In Workshop on Foundation on Databases and the Web (AMW’07), Punta del Este, Uruguay, October 23-26, 2007.
10. *The Consistency Extractor System: Querying Inconsistent Databases Using Answer Set Programs*. In the International Conference on Scalable Uncertainty Management (SUM’07), Washington DC, USA, October 10-12, 2007.
11. *Optimizing and Implementing Repair Programs for Consistent Query Answering in Databases*. In the Research Seminar, IRIT-Université Paul Sabatier, Toulouse, France, February 19, 2007.
12. *Optimized Methods for Consistent Query Answering in Databases*. In the Research Seminar, DAMA-Universitat Politècnica de Catalunya, Barcelona, Spain, February 13, 2007.
13. *ConsEx: The Consistency Extractor System*. In Workshop on Foundations of Databases and the Web (AMW’06), Glaciar Laguna San Rafael, Chile, November 6-10, 2006.
14. *Optimizing Repair Programs for Consistent Query Answering*. In the Research Seminar, School of Computer Science, Carleton University, Ottawa, Canada, March 31, 2006.

15. *Optimizing Repair Programs for Consistent Query Answering*. In the Graduate Seminar, University of Ottawa, Ottawa, Canada, September 23, 2006.
16. *Handling Inconsistencies in Data Warehouses*. In the Ph.D Workshop of the International Conference of Data Engineering (ICDE'04), Boston, USA, March 29, 2004.
17. *Applying Data Mining in the Academic Area* (in Spanish). In Software Engineering and Knowledge Engineering Workshop, Buenos Aires, Argentina, June 2001.

National Events

1. *Women in Engineering*. Workshop on Women in Engineering, Faculty of Engineering, Universidad del Bío-Bío, 2023.
2. *Efficient Repair of Dimension Hierarchies under Inconsistent Reclassification*. In Lo Mejor de lo Nuestro (LMN'18), Chilean Workshop on Computation, Santiago, Chile, November 5-9, 2018.
3. *Efficient Repair of Dimension Hierarchies under Inconsistent Reclassification*. In Lo Mejor de lo Nuestro (the better of us), in conjunction with the 37th International Conference of the Chilean Computer Science Society (SCCC'18), Santiago, Chile, November 5-9, 2018.
4. *Algorithms to Repair Inconsistent Data Warehouses*. In the IV Research Workshop, UBB, Concepción, December 2013.
5. *Repairing Inconsistent Dimensions in Data Warehouses*. In the II Women's Workshop in Computer Science, in conjunction with the Chilean Workshop on Computation, Valparaíso, November, 2012.
6. *CQA-WF: Consistent Query Answers to Conjunctive Queries using the Well-Founded Semantics*. In the XXIII Chilean Workshop on Computation, Curicó, Chile, November 9-11, 2011.
7. *Women in Computer Science*. In the I Women's Workshop in Computer Science, in conjunction with the Chilean Workshop on Computation, Curicó, Chile, November 9-11, 2011.
8. *Repairing Inconsistent Dimensions in Data Warehouses*. In the II Research Workshop, UBB, Concepción, Chile, December, 2011.
9. *Consistent Query Answering in Data Warehouses*. In the Graduate Seminar, UBB, Chillán, Chile, 2009.
10. *Handling Inconsistencies in Multidimensional Data Warehouses*. In the Graduate Seminar, Universidad de Concepción, Concepción, Chile, May 14, 2008.
11. *Handling Inconsistencies in Multidimensional Data Warehouses*. In the Research Seminar, UBB, Chillán, Chile, November, 2007.
12. *Handling Inconsistencies in Multidimensional Data Warehouses*. In the Research Seminar, UBB, Concepción, Chile, November, 2007.
13. *Efficient Computation of Logic Programs for CQA*. In the Graduate Seminar, Universidad de Concepción, Concepción, Chile, April 09, 2007.
14. *Optimizing and Implementing Repair Programs for Consistent Query Answering*. In the Research Seminar, UBB, Concepción, Chile, November 24, 2006.
15. *Modeling Data Warehouses*. In the Graduate Seminar, Department of Computer Science, Pontificia Universidad Católica, Santiago, Chile, August 10, 2002.
16. *The Data Mining Process*. In the Graduate Seminar, Department of Computer Science, Universidad de Chile, Santiago, Chile, April 2001.

8 Short Visits

1. **Grand Valley State University**, USA, October 23-27, 2023. **Objective:** To participate in an academic study program to graduate students of Facultad de Ciencias Empresariales, UBB.
2. **San Diego State University**, USA, October 24-28, 2022. **Objective:** To participate in an academic study program to graduate students of FACE, UBB.
3. **Instituto Tecnológico de Buenos Aires**, Argentina, June 2014. **Objective:** To participate as a member of a PhD thesis committee.
4. **Instituto de Computación, Universidad de la República**, Montevideo, Uruguay, August 2008. **Objective:** To teach the course *Deductive Databases and Logic Programming* in the Master in Computer Science, have meetings with master students and give the talk “Logic Programs for Computing Consistent Answers to Aggregate Queries”.
5. **DAMA-Universitat Politècnica de Catalunya (UPC)**, Barcelona, Spain, February 2007. **Objective:** To establish work relationships with the database group, and give the talk “Optimized Methods for Consistent Query Answering in Databases”.
6. **RIT-Université Paul Sabatier**, Toulouse, France, February 2007. **Objective:** To establish work relationships with the database group, and give the talk “Optimizing and Implementing Repair Programs for Consistent Query Answering in Databases”.

9 Research Committees

Organizing Committees

1. co-chair of Lo Mejor de lo Nuestro (LMN’19), in conjunction with the Chilean Workshop on Computation, Universidad de Concepción, Concepción, Chile, November 2019.
2. co-chair of the XXXIII International Conference of the Chilean Computer Science Society (SCCC’14), Talca, Chile, November 2014.
3. III Graduate Student Workshop on Computer Science, in conjunction with the Chilean Workshop on Computation, Antofagasta, Chile, November 2010.
4. Graduate Student Workshop on Data Management and the Web, in conjunction with the III Alberto Mendelzon Workshop on Foundations of Data Management, Arequipa, Perú, May 15, 2009.
5. I Graduate Student Workshop on Computer Science, in conjunction with the Chilean Workshop on Computation, Punta Arenas, Chile, November 2008.
6. Research Seminar on Computer Science, System Information Department, UBB, since 2007 (http://dsi.face.ubiobio.cl/?page_id=1681)
7. Research Seminar on Emerging Topics of Databases, UBB, Concepción, Chile, November 2000.

Program Committees

1. XLII International Conference of the Chilean Computer Science Society (SCCC’23), Concepción, Chile, November 2023.
2. XXVI Chilean Workshop on Computation, Talca, Chile, November 2014.
3. XXV Chilean Workshop on Computation, Temuco, Chile, November 2013.

4. XXXII International Conference of the Chilean Computer Science Society (SCCC'13), Temuco, Chile, November 2013.
5. V Graduate Student Workshop on Computer Science, in conjunction with the Chilean Workshop on Computation, Valparaíso, Chile, November 2012.
6. XXX International Conference of the Chilean Computer Science Society (SCCC'11), Curicó, Chile, November 2011.
7. XXIII Chilean Workshop on Computation, Curicó, Chile, November 2011.
8. II Graduate Student Workshop on Computer Science, in conjunction with the Chilean Workshop on Computation, Santiago, Chile, 2009.
9. XX Chilean Workshop on Computation (ECC'08), Punta Arenas, Chile, November 2008.

10 Memberships

1. Director of the Chilean Computer Science Society (SCCC), 2020-2024 (<https://sccc.cl/directorios-pasados/>).
2. Chilean Computer Science Society (SCCC).
3. Association for Computing Machinery (ACM).

11 Peer Evaluation

1. FONDEF projects (ANID), 2020.
2. International evaluator of Aneaes Agency, Paraguay, since 2017.
3. ANID (ex-CONICYT) Scholarships, since 2016.
4. Modern Applied Science Journal, since 2012.
5. CNA, since 2020.
6. Qualitas Agency, since 2012.
7. Acredita CI Agency, since 2016.
8. FONDECYT-CONICYT projects, 2009-2010.

12 Student Supervision

Graduate Students (Master in Computer Science, UBB)

1. Jonathan Gatica. *Machine Learning Methods to Generate a Database of Protein-Protein Complexes with Three-Dimensional Structure from Biological Texts*, co-supervisor, 2022.
2. Fernando Santolaya. *Efficient Computation of Spatial Queries over Spatial Data Stored in the Compact Data Structure k^2 -tree*, 2018.
3. Cristian Vallejos. *Compact Data Structures to Represent Data Warehouses into Main Memory*, 2017.
4. Luis Cabrera-Crot. *Dynamic Aggregation of Object's Trajectories*, 2016.

5. Raúl Arredondo. *Polynomial Time Algorithms to Compute Dimensions Repairs for Inconsistent Data Warehouses*, 2013.
6. Juan José Ramírez. *Polynomial Time Algorithms to Compute Approximate Answers to Queries in Inconsistent Data Warehouses*, 2013.

Undergraduate Students (Civil Engineering in Informatics, UBB, in Spanish)

1. Patricio Labra. *Simulador Laboratorio CIMUBB*, 2023.
2. Diego Muñoz, Ignacio Pardo. *Algoritmos de Álgebra de Mapas sobre Datos Ráster Almacenados en una Estructura de Datos Compacta k^3 -tree*, co-supervisor, 2023.
3. Bayron Reyes. *Algoritmo de Búsqueda Bi-Objetivo para la Optimización del Cálculo de la Consulta Skyline sobre una Estructura de Datos Compacta k^2 -tree*, co-supervisor, 2023.
4. Cristóbal Castro. *Implementación de la Consulta de Proximidad Espacial KCPQ en Lenguaje C++ sobre Datos Espaciales Almacenados en la Estructura de Datos Compacta k^2 -tree*, 2022.
5. Nicolás Millar. *Sistema de Intranet para Escuela Pre Escolar-Básica María Teresa Marchant*, 2022.
6. Oscar Plaza de los Reyes. *Implementación de Algoritmos de Control de Acceso para Datos RDF*, 2021.
7. Marión Taladriz. *Automatización y Predicción de Eliminación de Residuos Líquidos Industriales*, 2020.
8. Daniela Chávez. *Implementación de Prototipo de Inteligencia de Negocios para la Empresa QANALYTICS*, 2019.
9. Eric Herrera. *Aplicación Web que permita manipular datos ráster a través de las operaciones del álgebra de mapas, sobre datos ráster almacenados en la estructura compacta k^3 -tree*, 2018.
10. Ernesto Santander. *Aplicación Web para Fragmentación Horizontal y Vertical de Bases de Datos Relacionales Utilizando Algoritmos COMMIN y BEA*, 2018.
11. Fernando Linco. *Sistema Web y Móvil que Implementa Consultas de Agregación sobre Data Warehouses Almacenados en la Estructura de Datos Compacta CMHD*, 2017.
12. Alvaro Nahuel. *Implementación de un Sistema Web y Móvil para Obtener los K-pares de Vecinos más Cercanos entre dos Conjuntos de Puntos Espaciales Representados en la Estructura de Datos Compacta k^2 -tree*, 2017.
13. Carlos Aburto. *Desarrollo de una Aplicación que Computa Consultas de Agregación sobre Data Warehouses Almacenados en la Estructura Compacta k^2 -treap*, 2017.
14. Ignacio Maldonado. *Aplicación Web y Móvil para Implementar la Consulta de los K-vecinos más Cercanos en el Contexto de Centros de Salud de la Provincia de Concepción, sobre datos Espaciales Almacenados en la Estructura Compacta k^2 -tree*, 2017.
15. Fernando Salas. *Sistema Web de Gestión para Empresa Turística Ciclo Austral*, 2016.
16. Marianela Neira, Pablo Ramírez. *Planificación, Desarrollo e Implementación de una Plataforma Web de Evaluación y Comunicación de Empresas del Rubro de la Construcción*, 2015.
17. Victoria Sánchez, Marco Martínez. *Sistema para la Ayuda en la Gestión de la Empresa de Transportes Juana Reyes*, 2014.
18. Héctor Fierro, Victor Lizama. *Desarrollo de Aplicación para el Sistema de Control de Ingresos de Productos Pesqueros y otros relacionados a la Acuicultura en el Servicio Nacional de Pesca, de la Región del Bío-Bío Sernapesca*, 2012.

19. Sebastián Fernández. *Estrategia de Ejecución de Secuencias de Consultas a Bases de Datos*, 2012.
20. Christian Quevedo, Jimmy Olivares. *Sistema de Información Geográfico para análisis de catástrofes naturales que afectaron a la región del Bío–Bío*, 2011.
21. Humberto Ancalao, Omar Casanova. *Análisis e Implementación de Data Warehouse en Empresa de Manufactura de Fibropaneles de la Región del Bío–Bío*, 2010.
22. Julia Belmar, Jeniffer Cuevas. *Implementando la Semántica Well–Founded para Obtener Respuestas Consistentes a Consultas Conjuntivas desde Bases de Datos Inconsistentes*, 2009.
23. Alvaro Placencia. *Implementación de Data Warehouse Multidimensionales y Reparación de Inconsistencias*, 2009.
24. Hector Rubilar. *Implementación de Programas de Reparación para Obtener Respuestas Consistentes a Consultas de Agregación*, 2009.
25. Alberto Jara, M. Paz Viveros. *LiveRDF: Sistema de Consultas Sparql sobre una Base de Datos RDF*, 2009.
26. Ariela Carrera. *Implementando Programas de Reparación para Computar Respuestas Consistentes a Consultas en Sistemas P2P Inconsistentes*, 2009.
27. Enzo Molina, Sergio Torres. *CONSISTENT WITH: Una Cláusula SQL para la Obtención de Respuestas Consistentes a Consultas desde Bases de Datos Inconsistentes*, 2008.
28. Valeria Beratto, Grisell Osses. *Implementación de Algoritmos de Transformación de Consultas expresadas en Lógica de Primer Orden a Consultas expresadas en lenguaje SQL*, 2008.

Undergraduate Students (Engineering in Computation and Informatics, UBB, in Spanish)

1. Ricardo Flores. *Actualización del Sistema Integrado de Administración del Servicio de Impuestos Internos: Gestión de Usuarios y Solicitudes de Salidas Vehiculares, Salas, Equipos y Formularios*, 2023.
2. Cristian Barriga. *Desarrollo de Módulos de Gestión para Materiales, Bodegas y Reparaciones en la VIII Dirección Regional de Concepción del Servicio de Impuestos Internos*, 2023.
3. Francisco Muñoz, Jorge Valdivia. *Módulos de Apoyo para la Toma de Decisiones y Fidelidad de los Datos para el Sistema SIAv2*, 2023.
4. Bastián Hidalgo. *Desarrollo de Software para Controlar Visitas en Colegio San Pedro Nolasco Concepción*, 2023.
5. Sebastián Ñeguey. *Gestión de información sobre Estudiantes de Programas de Postgrado de la Facultad de Ciencias Empresariales (FACE)*, 2023.
6. Oscar Caro. *Desarrollo de Primera Aplicación Móvil en React Native de Apoyo a la Gestión para MIPYMEDE MDI Bío-Bío*, 2023.
7. Esteban Risopatrón. *Implementación de consultas de proximidad espacial KNN en lenguaje C++ sobre datos espaciales almacenados en la estructura de datos compacta k^2 -tree*, 2022.
8. Nicolás Condeza. *Sistema de Gestión para Consulta de Salud Mental Mentalhealth*, 2021.
9. Julián Escobar, Patrick Fernández. *Sistema de Apoyo a la Gestión de Pedidos, Inventario y Registro de Compras de Sushi Santafusión*, 2021.

10. Bastián Rodríguez. *Implementación de un Sistema de Gestión de Transportes para la Mejora de Procesos de Negocios de la Empresa Sotraser*, 2021.
11. Javier Sanhueza. *Desarrollo de Sistema de Gestión de Consulta Oftalmológica, Inventario y Compra/Venta de Productos Ofrecidos por la Óptica Optiver*, 2020.
12. Cristian Arteaga, César Toro. *Sistema de Plataformas Web y Dispositivos Móviles para el Área Comercial de la Empresa Sanitaria Aguas San Pedro S.A.*, 2012.
13. Oscar Bravo. *Sistema de Ventas y Gestión de Inventarios para Alimex S.A.*, 2012.
14. Guido Hernández. *Sistema de Control y Administración de Recursos (SICAR) para la Empresa Contratista MADESAN S.A.*, 2011.
15. Reinhold Mainhard, Camila Nuñez. *Sistema de Apoyo a la Administración de Programas de Capacitación*, 2011.
16. Karen Ceballos, Manuel Gutiérrez. *Sistema de Apoyo a la Gestión del Servicio Clínico Pabellón del Hospital San José de Coronel*, 2010.
17. Rodrigo Díaz, Claudio Varas. *Sistema de Ambiente Web de Gestión de Órdenes de Trabajo y Producción para TECBIO S.A.*, 2008.

13 Teaching

Undergraduate Courses (UBB)

1. *Databases*, Civil Engineering in Informatics, since 2017.
2. *Databases*, Engineering in Computation and Informatics, 2012, 2015, since 2019.
3. *Databases I*, Civil Engineering in Informatics, 2007-2011, 2013-2015, 2017-2018.
4. *Deductive Databases and Logic Programming*, Civil Engineering in Informatics, Engineering in Computation and Informatics, 2007-2008, 2010.
5. *Databases II*, Civil Engineering in Informatics, 2006-2013, 2016-2018, 2020.
6. *Informatics*, Civil Industrial Engineering, 2006.

Graduate Courses (UBB)

1. *Systems Management and Information Modeling*, PhD in Economics and Information Management, since 2022.
2. *Big Data*, PhD in Engineering, 2021, 2023.
3. *Thesis I-II*, Master in Computer Science, 2018-2022.
4. *Advanced Topics in Databases*, Master in Computer Science, since 2012.
5. *Spatial and Temporal Databases*, Master in Computer Science, 2014.
6. *Spatial and Temporal Databases*, Master in Informatics, 2014.
7. *Research Methodology*, Master in Computer Science, 2011-2012.
8. *Deductive Databases and Logic Programming*, Master in Computer Science, 2011.

Graduate Courses at Universidad de la República (Uruguay)

1. *Deductive Databases and Logic Programming*, Master in Computer Science, 2008.

Graduate Courses at Universidad de Concepción (Chile)

1. *Advanced Topics in Databases*, Master in Computer Science, 2007.
2. *Deductive Databases and Logic Programming*, Master in Computer Science, 2007.

Teaching and Planning Projects

1. *Factors that Generate a Delay in the Timely Degree in Students of the Computer Execution Engineering and Informatics Degree*. Teaching Development Fund, code FDD2024-34, 2024, co-researcher.
2. *Seminar in Computer Science*. FAPE-UBB, co-director, 2018.
3. *Seminar in Computer Science*. FAPE-UBB, director, 2016.
4. *Implementation of a Methodology Based on Problems to Databases Courses*. Teaching Development Fund, code FDD2015-09, 2015, director.

University Extension Projects

1. *Training and Selection Program for High School Students to the National Olympics on Informatics*. University Extension Project, since 2020.
2. *Training and Selection Program for High School Students to the National Olympics on Informatics 2019*, project PEAUC-04-2019, 2019.
3. *Training and Selection Program for High School Students to the National Olympics on Informatics 2018*, project PEAUC-06-2018, 2018.
4. *Training and Selection Program for High School Students to the National Olympics on Informatics 2017*, project PEAUC-01-2017, 2017.
5. *Training and Selection Program for High School Students to the National Olympics on Informatics 2016*, project PEAUC-06-2016, 2016.
6. *Training and Selection Program for High School Students to the National Olympics on Informatics 2015*, project PREAU-03-2015, 2015.
7. *Training and Selection Program for High School Students to the National Olympics on Informatics 2014*, project PEAU-17-2014, 2014.

14 Administration

1. Research and Graduate Coordinator, FACE, since December 2022.
2. Director of the Master in Computer Science, campus Concepción, 2018 - January 2023.
3. Director of the Information System Department, April 2011 - May 2017.
4. Director of the research group *ALBA: Algorithms and Databases*, 2016-2017.
5. Director of the Master in Computer Science, campus Concepción, 2011-2012.
6. Director of the Master in Computer Science, campus Concepción-Chillán, 2009-2010.