

Curriculum Vitae

1 Personal Information

- **Name:** Ricardo Javier Barrientos Rojel
- **Currently:**
 - Assistant Professor at DCI Department, [Catholic University of Maule](#), Chile.
 - Researcher at [LITRP Laboratory](#), Catholic University of Maule, Chile.
 - Program Director, [Master in Computer Science](#), Catholic University of Maule, Chile.
- **Personal website:** <http://www.ribarrie.cl>
- **e-mail:** ricardo.j.barrientos@gmail.com, rbarrientos@ucm.cl
- **Year of birth:** 1982
- **Nationality:** Chilean
- **Qualification:** Currently, I fulfill the requirements to guide Engineering doctoral thesis in Chile (according to the [National Accreditation Commission](#)).
- **Areas of interest:** High Performance Computing, Information Retrieval, Biometrics.

2 Studies

- **2013:** PhD in Computer Science, Complutense University of Madrid, Madrid, Spain.
Graduated with *European Mention*.
Thesis: “Similarity search in metric spaces on parallel multi-core and multi-GPU platforms”
Advisors: [José I. Gómez](#), [Manuel Prieto](#).
- **2011:** MSc in Computer Science, Complutense University of Madrid, Madrid, Spain.
Thesis: “kNN query processing in metric spaces using GPUs”
Advisors: [José I. Gómez](#), [Christian Tenllado](#).
- **2011:** MSc in Computer Science, University of Chile, Santiago, Chile.
Graduated with honors.
Thesis: “Similarity search in metric spaces on multi-core platforms (CPU and GPU)”
Advisor: [Mauricio Marin](#).
- **2006:** Computer Engineer, University of Magallanes, Punta Arenas, Chile.
Thesis: “Parallel strategies of *egnat* index using a cluster of computers”
Advisor: [Roberto Uribe-Paredes](#).

2.1 Others

- **2018:** Diploma in University Teaching, Catholic University of Maule, Chile.

3 Research Projects

- **2023-2025:** Responsible Investigator in the IDeA I+D (ex-FONDEF) Project ID23i10242 “Large-scale identification of individuals based on palm vein biometrics”. Funding Entity: ANID, Chilean Government. Amount awarded: \$250,000 USD.
- **2020-2024:** Co-Investigator in the Fondecyt Regular “Very Large Fingerprint Classification based on a Fast and Distributed Extreme Learning Machine Neural Network”. Funding Entity: Conicyt, Chilean Government.
- **2018-2020:** Responsible Investigator in the FONDEF IDeA Project ID17i10254 “Massive Identification of People using the Fingerprint”. This project was ranked 6th among 429 applications. Funding Entity: Conicyt, Chilean Government. Amount awarded: \$250,000 USD.
- **2018:** Academic Advisor of the Project FONDEF VIU VIU18P0142 “Mobile Biometric Assistance Control”. Funding Entity: Conicyt, Chilean Government.
- **2015-2016:** Responsible Investigator in the DIUFRO Project DI15-0031 (Universidad de la Frontera (UFRO), Chile), “Parallel Computing for Information Retrieval”.

- **2012-2015:** Researcher in the MEC CICYT¹ Project TIN 2012/32180, "Arquitecturas y tecnologías emergentes. Eficiencia energética mediante heterogeneidad". Head: Manuel Prieto Mat'ias.
- **2009-2013:** PhD student in the MEC CICYT¹ Project TIN 2008/00508, "Arquitecturas HW/SW para sistemas de alto rendimiento II". Head: Francisco Tirado Fernández.

4 Patents

- Patent "Mobile Device for Identification of People by Fingerprint", Inventors: Ricardo J. Barrientos, Ruber Hernández-García, Marco Mora Cofé, Wladimir Soto-Silva, Daniel Peralta Camara, Register No.: 65.809, National Institute of Industrial Property.

5 Administration

- **2019 - today:** Program Director, Master in Computer Science, Catholic University of Maule, Chile.
- **2017 - today:** Guest member of the Faculty Council, Faculty of Engineering Sciences, Catholic University of Maule, Chile.
- **2017 - 2018:** Program Director, Computer Engineering (evening mode), Catholic University of Maule, Chile.

6 Accreditation Activities

- **2021:** Quality Committee Director of the Master in Computer Science, Catholic University of Maule, Chile.
- **2016 - 2017:** Quality Committee Coordinator of the Computer Engineering career, Catholic University of Maule, Chile. Accreditation obtained: 6 years.

7 Research Stays

- **April, 2017:** Research stay at [VIB](#) Center, Ghent University, Ghent, Belgium. Host professor: Daniel Peralta.
- **2014-2015:** Postdoctoral stay at Universidad de La Frontera (UFRO), Chile.
- **April - June, 2012:** Research stay at Masaryk University, Brno, Czech Republic. Host professor: [Pavel Zezula](#).

8 Memberships

- Member of the Chilean Computer Science Society ([SCCC](#)).
- Member of the Chilean Association of Pattern Recognition ([ACHIRP](#)).

9 Teaching

9.1 Creation of Careers/Degrees

- **2020-2021:** Active participation in the creation of "Doctorate in Engineering" at Universidad Católica del Maule, Talca, Chile.

9.2 Teaching in Postgraduate:

9.3 Created Courses

- **2016 - today:** *High Performance Computing*, Master in Computer Science. Catholic University of Maule, Talca, Chile.

9.3.1 Regular Courses

- **2016 - today:** *Seminar I y Advanced Databases*, Master in Computer Science. Catholic University of Maule, Talca, Chile.
- **2015:** *Systems Modeling*. Master in Informatic. Universidad de La Frontera, Temuco, Chile.

¹CICYT: Interministerial Commission on Science and Technology. Public agency of the Spanish Government.

9.4 Teaching in Undergraduate:

9.4.1 Created Courses

- **2014 - 2015:** *Information Retrieval, Parallel Computing*. Universidad de La Frontera, Temuco, Chile.

9.4.2 Regular Courses

- **2016 - today:** *Analysis of Algorithms, Distributed Systems, Competitive Programming, Object Oriented Programming, Programming Languages, Introduction to Engineering*. Catholic University of Maule, Talca, Chile.
- **2014 - 2015:** *Computer Laboratory*. Universidad de La Frontera, Temuco, Chile.
- **2006:** *Computer Programming*. Universidad de Magallanes, Punta Arenas, Chile.

9.4.3 Other activities

- **2016 - 2022:** Coach of the teams at Catholic University of Maule for the ICPC Programming Contest.

10 Supervision and Advising

10.1 Supervision of Postdoctoral Researchers:

- Supervision of the postdoctoral researcher Ruber Hernández-García. Research developed in the LITRP Lab (www.litrp.cl).

10.2 Advisor of Postgraduate Students:

- **Nombre:** Elkin Gelvez
Tesis: "Mathematical Modeling on Parallel and Distributed Computing based on Extreme Learning Machine using Large-Scale Databases".
Programa: PhD in Applied Mathematical Modeling, Universidad Católica del Maule, Chile.
- **Name:** Hernán Campos
Thesis: "Biometric System of Iris Recognition based on Texture Descriptors on a parallel platform".
Program: Master in Computer Science, Catholic University of Maule, Chile.
- **Name:** Cristofher Rojas
Thesis: "Individuals Identification using Finger Veins and Palm Veins".
Program: Master in Computer Science, Catholic University of Maule, Chile.
- **Name:** Roberto Ahumada
Thesis: "Bioinformatic Pipeline for the Analysis of Immunoglobulin Repertoires Sequenced by Nanopore".
Program: Master in Computer Science, Catholic University of Maule, Chile.
- **Name:** Felipe Tirado
Thesis: "Accelerating Ant Colony Optimization using a Xeon Phi coprocessor".
Program: Master in Computer Science, Catholic University of Maule, Chile.

10.3 Advisor of Undergraduate Students:

- **Nombre:** Paulina Quezada
Tesis: "Information Retrieval on a Web Search Engine".
Program: Computer Science Engineering, Catholic University of Maule, Chile.
- **Nombre:** Agustin Bustos
Tesis: "Cola de Prioridad Concurrente sobre un sistema multi-núcleo de memoria compartida".
Program: Computer Science Engineering, Catholic University of Maule, Chile.
- **Nombre:** Miguel Ortega
Tesis: "Sorting Algorithms using an Intel Xeon Phi coprocessor".
Program: Computer Science Engineering, Catholic University of Maule, Chile.
- **Nombre:** Ramiro Urbina
Tesis: "Retrieving the Chilean Web".
Program: Computer Science Engineering, Catholic University of Maule, Chile.

- **Nombre:** Chien-Hao Chen
Tesis: "Creation of an Inverted Index using Concurrent Data Structures (Linked List and Map)".
Program: Computer Science Engineering, Catholic University of Maule, Chile.
- **Nombre:** Cristofher Rojas
Tesis: "kNN Solutions over Different Parallel Platforms".
Program: Computer Science Engineering, Catholic University of Maule, Chile.
- **Nombre:** Jenniffer González
Tesis: "Mobile application for Attendance Control".
Program: Computer Science Engineering, Catholic University of Maule, Chile.
- **Nombre:** Pablo Cáceres
Tesis: "Web Application to create Generic Forms and Scalable Reports".
Program: Computer Science Engineering, Catholic University of Maule, Chile.
- **Name:** Carlos Toledo
Thesis: "Exhaustive and indexed search to solve range queries using a Xeon Phi coprocessor".
Program: Computer Science Engineering, Universidad de La Frontera (UFRO), Chile.
- **Name:** Fabricio Millaguir
Thesis: "kNN queries processing using exhaustive algorithms on GPU".
Program: Computer Science Engineering, Universidad de La Frontera (UFRO), Chile.

11 Languages

English: Fluent.

Spanish: Native.

12 Distinctions and Scholarships

- **2012:** Second prize in the XX Contest of Latin American Computer Science MSc. Theses, given by the Latin American Center of CS Studies (CLEI).
- **May-July, 2012:** Scholarship to do a research stay as part of a sub-program of the FPI doctoral scholarship, Spain.
- **October/2009 - October/2013:** FPI doctoral scholarship, given by the Ministry of Science and Innovation of Spain.

13 Scientific Events Organization

- Co-organizer of the "1st. Workshop of PhD in Engineering", Univ. Católica del Maule, Chile, January 2023.
- Co-Chair of the 38-th International Conference of the Chilean Computer Science Society (SCCC), Concepción, Chile, 2019.
- Co-organizer of the workshop "Bioinformatics Workshop", Talca, Chile, September 2016.
- Co-organizer of the workshop "HPC-UCM", Talca, Chile, September 2016.
- Co-organizer of the workshop "Escuela HPC", Temuco, Chile, January 2016.
- Co-organizer of the workshop "Escuela HPC", Temuco, Chile, October 2014.

14 Referee Work

14.1 In Projects:

- **2018:** Reviewer of *Fondectyt de Iniciación* projects for CONICYT (Chilean Government).

14.2 In PhD Thesis

- **2019:** Reviewer of the PhD thesis "User-defined Execution Relaxations for Enhanced Programmability in High-Performance Parallel Computing". Author: Antón Rey Villaverde. Program: PhD in Computer Science, Complutense University of Madrid, Spain.

14.3 In Journals and Conferences:

- Journal of Supercomputing.
- Journal of Parallel and Distributed Computing.
- Canadian Journal of Electrical and Computer Engineering.
- Scalable Computing: Practice and Experience.
- Journal of Software Engineering for Robotics (JOSER).
- Program Committee member of: *Workshop on Complex Problems over High Performance Computing Architectures* (CPHPCA 2015), *International Conference of the Chilean Computer Science Society* (SCCC).

15 Invited Talks and Tutorials

- Keynote talk in “IX International Conference Days of Applied Mathematics”, Cúcuta, Colombia, 2021.
- Keynote talk in “VIII International Conference Days of Applied Mathematics”, Cúcuta, Colombia, 2021.
- Talk in Workshop “Computación Heterogénea”. Organized by Univ. del Bío-Bío and Intel Corporation. Chillán, Chile, 2021.
- Talk of “High Performance Computing and Biometrics”. VII International Conferene Days of Applied Mathematics, Cúcuta, Colombia, 2020.
- Tutorial “GPU Programming”. In 10th International Conference on Pattern Recognition Systems (ICPRS 2018), Valparaíso, Chile.
- Talk and Tutorial of “GPU Programming”. Universidad Andrés Bello, Chile, August 2017.
- Keynote talk in “Encuentro Regional de Software Libre UCM 2015”, Talca, Chile, October 2015.
- “Coprocessors (GPU & Xeon Phi)”. Catholic University of Maule, Chile, October 2015.
- Tutorial “GPU Programming”. Jornadas Chilena de Computaci’on (JCC 2014). Talca, Chile, November 2014.
- “Using Coprocessors (GPU & Xeon Phi) for Similarity Search”. Catholic University of Maule, Chile, August 2014.
- “Searching in Metric Spaces using GPUs”. Universidad de Magallanes, Chile, June 2011.

16 Publications

2023:

59. Edwin H. Salazar Jurado, Ruber Hernández-García, Karina Vilches-Ponce, Ricardo J. Barrientos, Marco Mora, Gaurav Jaswal, **“Towards the generation of synthetic images of palm vein patterns: A review”**, Information Fusion, Elsevier, 2023, Indexación: WoS.

2022:

58. Patent **“Mobile Device for Identification of People by Fingerprint”**, Inventors: Ricardo J. Barrientos, Ruber Hernández-García, Marco Mora Cofé, Wladimir Soto-Silva, Daniel Peralta Camara, Register No.: 65.809, National Institute of Industrial Property.
57. Ricardo J. Barrientos, Javier A. Riquelme, Ruber Hernández-García, Cristóbal A. Navarro, Wladimir Soto-Silva, **“Fast kNN query processing over a multi-node GPU environment”**, The Journal of Supercomputing, Springer, DOI 10.1007/s11227-021-03975-2, 2021. Indexación: WoS.
56. R. Hernández-García, Z. Feng, R.J. Barrientos, F.M. Castro, J. Ramos-Cózar, Nicolás Guil, **“CNN-based Model for Gender and Age Classification based on Palm Vein Images”**, In 12th International Conference of Pattern Recognition Systems (ICPRS 2022), IEEE Xplore, Francia, DOI 10.1109/ICPRS54038.2022.9854057, Marzo 2022. Indexación: Scopus.
55. Roberto Ahumada-García, David Zabala-Blanco, Ismael Soto, Xaviera A. López-Cortés, Ricardo J. Barrientos, **“Classification of Diseased and Healthy Apple Leaves through Extreme Learning Machines”**, IEEE ICA-ACCA 2022, IEEE, 2022, Indexing: Scopus.
54. David Zabala-Blanco, Ruber Hernández-García, Ricardo J. Barrientos, Roberto Ahumada-García, **“PVEIN-MLELM: a Novel Palm Vein Identification Approach through Multilayer Extreme Learning Machine”**, IEEE ICA-ACCA 2022, IEEE, 2022, Indexing: Scopus.

53. Sebastián Guidet, Ruber Hernández-García, Fernando Emmanuel Frati, Ricardo J. Barrientos, **“Comparative analysis of exhaustive searching on a massive finger-vein database over multi-node/multi-core and multi-GPU platforms”**, X Jornadas de Cloud Computing, Big Data & Emerging Topics, La Plata, 2022.
52. Sebastián Guidet, Axel Quinteros, Ruber Hernández-García, Fernando Emmanuel Frati, Ricardo J. Barrientos, **“A comparative analysis of massive finger-vein recognition algorithms: from energy consumption perspective”**, In 41th International Conference of the Chilean Computer Science Society (SCCC 2022), IEEE Xplore, Santiago, Chile, DOI 10.1109/SCCC57464.2022.10000304, Noviembre 2022. Indexación: Scopus.
51. Elkin Gelvez-Almeida, Ricardo J. Barrientos, Karina Vilches-Ponce and Marco Mora, **“Parallel Training of a Set of Online Sequential Extreme Learning Machines”**, In 41th International Conference of the Chilean Computer Science Society (SCCC 2022), IEEE Xplore, Santiago, Chile, DOI 10.1109/SCCC57464.2022.10000361, Noviembre 2022. Indexación: Scopus.
50. Ricardo J. Barrientos, Fabián Silva-Pavez, Ruber Hernández-García, Marco Mora, **“Using Heaps on GPU”**, In 41th International Conference of the Chilean Computer Science Society (SCCC 2022), IEEE Xplore, Santiago, Chile, DOI 10.1109/SCCC57464.2022.10000280, Noviembre 2022. Indexación: Scopus.

2021:

49. Cristóbal A. Navarro, Roberto Carrasco, Ricardo J. Barrientos, Javier A. Riquelme, Raimundo Vega, **“GPU Tensor Cores for fast Arithmetic Reductions”**, IEEE Transactions on Parallel and Distributed Systems, IEEE, volume 32, number 1, pages 72-84, DOI 10.3390/app10103443, 2021. Indexing: WoS.
48. Jean Bragard, Javier A. Velez, Javier A. Riquelme, Laura M. Perez, Ruber Hernández-García, Ricardo J. Barrientos, David Laroze, **“Study of type-III intermittency in the Landau-Lifshitz-Gilbert”**, Physica Scripta, IOP, Volume 96, Number 12, DOI 10.1088/1402-4896/ac198e, 2021. Indexing: WoS.
47. Edwin Salazar, Ruber Hernández-García, Ricardo J. Barrientos, Karina Vilches, Marco Mora, Angel Vásquez, **“Generating Style-based Palm Vein Synthetic Images for the Creation of Large-Scale Datasets”**, In 11th International Conference of Pattern Recognition Systems (ICPRS 2021), IEEE Xplore, Curicó, Chile, DOI 10.1049/icp.2021.1451, Marzo 2021. Indexing: Scopus.
46. Edwin Salazar, Ruber Hernández-García, Ricardo J. Barrientos, Karina Vilches, Marco Mora, Angel Vásquez, **“Automatic Generation of Synthetic Palm Vein Images: a Nature-based Approach”**, In 11th International Conference of Pattern Recognition Systems (ICPRS 2021), IEEE Xplore, Curicó, Chile, DOI 10.1049/icp.2021.1452, Marzo 2021. Indexing: Scopus.
45. David Zabala-Blanco, Ruber Hernández-García, Ricardo J. Barrientos, Marco Mora, **“Evaluation of the standard and regularized ELMs for gender and age classification based on palm vein images”**, In 40th International Conference of the Chilean Computer Science Society (SCCC 2021), IEEE Xplore, La Serena, Chile, DOI 10.1109/SCCC54552.2021.9650435, November 2021. Indexing: Scopus.
44. José I. Santamaría, Ruber Hernández-García, Ricardo J. Barrientos, Francisco Manuel Castro, Julián Ramos-Cózar, Nicolás Guil, **“Evaluation of end-to-end CNN models for palm vein recognition”**, In 40th International Conference of the Chilean Computer Science Society (SCCC 2021), IEEE Xplore, La Serena, Chile, DOI 10.1109/SCCC54552.2021.9650384, November 2021. Indexing: Scopus.
43. Ruber Hernández-García, José I. Santamaría, Ricardo J. Barrientos, Francisco Manuel Castro, Julián Ramos-Cózar, Nicolás Guil, **“Large-scale palm vein recognition on synthetic datasets”**, In 40th International Conference of the Chilean Computer Science Society (SCCC 2021), IEEE Xplore, La Serena, Chile, DOI 10.1109/SCCC54552.2021.9650413, November 2021. Indexing: Scopus.

2020:

42. David Zabala-Blanco, Marco Mora, Ricardo J. Barrientos, Ruber Hernández-García, José Naranjo-Torres, **“Fingerprint Classification through Standard and Weighted Extreme Learning Machines”**, Applied Sciences, MDPI, volume 10, number 12, DOI 10.3390/app10124125, 2020. Indexing: WoS.

41. José Naranjo-Torres, Marco Mora, Ruber Hernández-García, Ricardo J. Barrientos, Claudio Fredes, Andres Valenzuela, **“A Review of Convolutional Neural Network Applied to Fruit Image Processing”**, Applied Sciences, MDPI, volume 10, number 10, DOI 10.3390/app10103443, 2020. Indexing: WoS.
40. Javier A. Riquelme, Ricardo J. Barrientos, Ruber Hernández-García, Cristóbal A. Navarro **“An exhaustive algorithm based on GPU to process a kNN query”**, In 39th International Conference of the Chilean Computer Science Society (SCCC 2020), November 2020. Indexing: Scopus.
39. David Zabala-Blanco, Marco Mora, Ruber Hernández-García, Ricardo J. Barrientos **“The Extreme Learning Machine Algorithm for Classifying Fingerprints”**, In 39th International Conference of the Chilean Computer Science Society (SCCC 2020), November 2020. Indexing: Scopus.
38. Sebastián Guidet, Ricardo J. Barrientos, Ruber Hernández-García, Fernando Emmanuel Frati, **“Exhaustive similarity search on a many-core architecture for finger-vein massive identification”**, In Journal of Physics: Conference Series, Volume 1702, VII International Conference Days of Applied Mathematics, San José de Cúcuta, Colombia, 2020. Indexing: Scopus.
37. Elkin Gelvez-Almeida, Yvan Baldera-Moreno, Yoleidy Hurfano, Miguel Vera, Marco Mora, Ricardo J. Barrientos, **“Parallel methods for linear systems solution in extreme learning machines: an overview”**, In Journal of Physics: Conference Series, Volume 1702, VII International Conference Days of Applied Mathematics, San José de Cúcuta, Colombia, 2020. Indexing: Scopus.
36. Angel Vásquez, Marco Mora, Verónica Aubin, Edwin Salazar, Ricardo J. Barrientos, Ruber Hernández-García, Karina Vilches, **“Writer verification based on simple graphemes and extreme learning machine approaches”**, In Journal of Physics: Conference Series, Volume 1671, III Workshop on Modeling and Simulation for Science and Engineering (III WMSSE), Armenia, Colombia, 2020. Indexing: Scopus.

2019:

35. Ruber Hernández-García, Ricardo J. Barrientos, Cristofher Rojas, Wladimir E. Soto-Silva, Marco Mora, Paulo Gonzalez, Fernando Emmanuel Frati **“Fast Finger Vein Recognition Based on Sparse Matching Algorithm under a Multicore Platform for Real-Time Individuals Identification”**, Symmetry, MDPI, volume 11, number 9, DOI 10.3390/sym11091167, 2019. Indexing: WoS.
34. Ruber Hernández-García, Ricardo J. Barrientos, Cristofher Rojas, Marco Mora, **“Individuals Identification based on Palm Vein Matching under a Parallel Environment”**, Applied Sciences, MDPI, volume 9, number 14, DOI 10.3390/app9142805, 2019. Indexing: WoS.
33. Roberto Ahumada-García, Jorge Gozález-Puelma, Diego Alvarez-Saravia, Ricardo J. Barrientos, Roberto Uribe-Paredes, Xaviera A. López-Cortés, Marcelo A. Navarrete, **“Identification of Immunoglobulin Gene Usage in Immune Repertoires Sequenced by Nanopore Technology”**, In 7th International Work-Conference on Bioinformatics and Biomedical Engineering (IWBBIO 2019), Springer, LNCS volume 11465, LNBI volume 11465. Granada, Spain, 2019. Indexing: Scopus.
32. Ricardo J. Barrientos, Ruber Hernández-García, Kevin Ortega, Emilio Luque, Daniel Peralta, **“Heap-based Algorithms to Accelerate Fingerprint Matching on Parallel Platforms”**, In 7th International Conference on Cloud Computnig & Big Data (JCC&BD 2019), Springer. La Plata, Argentina, 2019. Indexing: Scopus.
31. Philip Iglesias, Ruber Hernández-García, Ricardo J. Barriens Emmanuel Goncalves, Marco Mora **“Iris recognition based on displacement information using a sparse matching technique”**, In 38th International Conference of the Chilean Computer Science Society (SCCC 2019), November 2019. Indexing: Scopus.
30. Hernán Campos, Ruber Hernández-García, Ricardo J. Barrntos **“Evaluation of LBP-based descriptors for Iris Recognition based on Learning Vector Quantization Classifier under a multi-core Platform”**, In 38th International Conference of the Chilean Computer Science Society (SCCC 2019), November 2019. Indexing: Scopus.
29. Ruber Hernández-García, Sebastián Guidet, Ricardo J. Barrientos, Fernando Emmanuel Frati **“Massive Finger-vein Identification based on Local Line Binary Pattern under Parallel and Distributed Systems”**, In 38th International Conference of the Chilean Computer Science Society (SCCC 2019), November 2019. Indexing: Scopus.

2018:

28. Cristofher Rojas, Ruber Hernández-García, Ricardo J. Barrientos, **“Individuals Identification Using Finger Veins under a Multi-core Platform”**, In 37th International Conference of the Chilean Computer Science Society (SCCC 2018), November 2018. Indexing: Scopus.

27. P. Gonzalez, F. Vasquez, B. Alcaino, R.J. Barrientos, M. Mora, F. Tirado, **“Heuristic Parametrization of Anisotropic Diffusion Filtering”**, In 37th International Conference of the Chilean Computer Science Society (SCCC 2018), November 2018. Indexing: Scopus.
26. P. Gonzalez, B. Alcaino, R.J. Barrientos, M. Mora, F. Tirado, C. Tauber, **“Dynamic PET Image Denoising”**, In 9th International Conference on Pattern Recognition Systems (ICPRS 2018), IET Digital Library, Mayo 2018. Indexing: Scopus.

2017:

25. Felipe Tirado, Ricardo J. Barrientos, Paulo González, Marco Mora, **“Efficient exploitation of the Xeon Phi architecture for the Ant Colony Optimization (ACO) metaheuristic”**, Journal of Supercomputing, Springer DOI 10.1007/s11227-017-2124-5. Indexing: WoS.
24. Ricardo J. Barrientos, Fabricio Millaguir, José L. Sánchez, Enrique Arias, **“GPU-based exhaustive algorithms processing kNN queries”**, Journal of Supercomputing, Springer 73(10):4611-4634, DOI 10.1007/s11227-017-2110-y. Indexing: WoS.

2016:

23. Carlos M. Toledo, Ricardo J. Barrientos, Andrés I Ávila, **“Similarity (range and kNN) queries processing on an Intel Xeon Phi coprocessor”**, Cluster Computing, Springer 19(1):57-71, DOI 10.1007/s10586-015-0515-z. Indexing: WoS.

2015:

22. F. Tirado, R. Barrientos, A. Ávila, **“Solution for ACO using an Intel Xeon Phi coprocessor”**, In 2nd Conference on Business Analytics in Finance and Industry (BAFI 2015). Santiago, Chile, December 2015.
21. F. Tirado, R. Barrientos, A. Urrutia, **“Using a coprocessor to solve the Ant Colony Optimization algorithm”**, In XXXIV International Conference of the Chilean Computer Science Society (SCCC 2015). IEEE CPS. November, 2015.
20. F. Tirado, R.J. Barrientos, A. Urrutia, A. Ávila, **“Solución del Algoritmo ACO (Ant Colony Optimization) mediante un coprocesador Intel Xeon Phi”** (Poster), In XI Workshop of Copec-UC Foundation, November 2015.

2014:

19. F. Millaguir, R.J. Barrientos, A. 'Avila, J.I. G'omez, **“Resolviendo consultas kNN mediante algoritmos exhaustivos en GPU”**, In XXVI Encuentro Chileno de Computación (ECC 2014), Jornadas Chilenas de Computación (JCC 2014). Talca, Chile, November 2014 Indexing: Scopus..
18. C. Toledo, R.J. Barrientos, **“B'usqueda exhaustiva utilizando el coprocesador Intel Xeon Phi”**, In XXVI Encuentro Chileno de Computación (ECC 2014), Jornadas Chilenas de Computación (JCC 2014). Talca, Chile, Novemb 2014. Indexing: Scopus.

2013:

17. R.J. Barrientos, J.I. G'omez, C. Tenllado, M. Prieto, M. Marin, **“Range query processing on single and multi GPU environments”**, Computers and Electrical Engineering, 39(8):2656-2668. Indexing: WoS.
16. R.J. Barrientos, J.I. G'omez, C. Tenllado, M. Prieto, P. Zezula, **“Multi-level clustering on metric spaces using a multi-GPU platform”**, In 19th International European Conference on Parallel and Distributed Computing (Euro-Par 2013). Springer, LNCS. Aachen, Germany, August 2013. Indexing: Scopus.

15. R.J. Barrientos,
“Pipeline strategies to accelerate range query processing on a multi-GPU environment”,
 In XXV Encuentro Chileno de Computación (ECC 2013), Jornadas Chilenas de Computación. Temuco, Chile, November 2013.
14. Ricardo J. Barrientos,
“Similarity search in metric spaces on parallel multi-core and multi-GPU platforms”,
 PhD Thesis, Complutense University of Madrid, Madrid, Spain, 2013.
 Advisors: José I. Gómez, Manuel Prieto.

2012:

13. R.J. Barrientos, J.I. Gómez, C. Tenllado, M. Prieto, M. Marin,
“Range query processing in a multi-GPU environment”,
 In 10th IEEE International Symposium on Parallel and Distributed Processing with Applications (ISPA 2012). IEEE. Madrid, Spain, July 2012. Indexing: Scopus.
12. Ricardo J. Barrientos,
“Similarity search in metric spaces on multi-core platforms (CPU and GPU)”,
 XXXVIII Latin American Conference on Informatics (CLEI 2012), Medellín, Colombia, Oct. 2012.
 Second prize at XX CLEI Contest of Latin American Computer Science MSc. Theses.

2011:

11. R.J. Barrientos, J.I. Gómez, C. Tenllado, M. Prieto, M. Marin,
“kNN Query Processing in Metric Spaces using GPUs”,
 In 17th International European Conference on Parallel and Distributed Computing (Euro-Par 2011). Springer, LNCS. Bordeaux, France, Sept. 2011. Indexing: Scopus.
10. R.J. Barrientos, J.I. Gómez, C. Tenllado, M. Prieto,
“Query Processing in Metric Spaces using GPUs”,
 XII Jornadas de Paralelismo, Tenerife, Spain, Sept. 2011.
9. Ricardo J. Barrientos,
“kNN query processing in metric spaces using GPUs”,
 Thesis of MSc in Computer Science, Complutense University of Madrid, Madrid, Spain, 2011.
 Advisors: José I. Gómez, Christian Tenllado.
8. Ricardo J. Barrientos,
“Similarity search in metric spaces on multi-core platforms (CPU and GPU)”,
 Thesis of MSc in Computer Science, University of Chile, Santiago, Chile, 2011.
 Advisors: Mauricio Marin.

2010:

7. G.V. Costa, R. Barrientos, M. Marin and C. Bonacic,
“Scheduling Metric-Space Queries Processing on Multi-Core Processors”,
 In 18th Euromicro International Conference on Parallel, Distributed and Network-Based Computing (PDP 2010). IEEE CS. Pisa, Italy, Feb. 2010. Indexing: Scopus.
6. R.J. Barrientos, J.I. Gómez, C. Tenllado, M. Prieto,
“Heap-Based k-Nearest Neighbor Search on GPUs”,
 XXI Jornadas de Paralelismo, Valencia, Spain, Sept. 2010.

2009:

5. G.V. Costa, M. Marin, R. Barrientos and C. Bonacic,
“Estructuras Métricas Paralelas en la Recuperación de Imágenes en la Web”.
 XIII Workshop de Sistemas Distribuidos y Paralelismo (WSDP), Jornadas Chilenas de Computación, Santiago, Chile, Nov. 2009.

2007:

4. M. Marin, R. Uribe, and R. Barrientos,
“Searching and Updating Metric Space Databases using the Parallel EGNAT”,
In 7th International Conference on Computational Science (ICCS 2007), Springer, LNCS. Beijing, China, May 2007. Indexing: Scopus.

2006:

3. Roberto Uribe, Gonzalo Navarro, Ricardo J. Barrientos, M. Marin,
“An index data structure for searching in metric space databases”,
In 6th International Conference on Computational Science (ICCS 2006). Springer, LNCS. Reading, UK, May 2006. Indexing: Scopus.
2. Ricardo Barrientos R., Roberto Uribe Paredes,
“Estrategias de paralelización para el *egnat*”,
XXXII Conferencia Latinoamericana de la Informática (CLEI 2006), Santiago, Chile, Agosto 2006.
1. Ricardo J. Barrientos,
“Parallel strategies of *egnat* index using a cluster of PCs”,
Thesis of Computer Engineering, University of Magallanes, Punta Arenas, Chile, 2006.
Advisors: Roberto Uribe, Mauricio Marin.

17 References

- Dr. Manuel Prieto, Professor at Complutense University of Madrid, Spain, mpmatias@ucm.es
- Dr. Emilio Luque, Professor at Autonomous University of Barcelona, Spain, emilio.luque@uab.es
- Dr. Marco Mora, Head of the LITRP Lab, Catholic University of Maule, Talca, Chile, marcomoracofre@gmail.com
- Dr. Mauricio Marin, Professor at University of Santiago, Santiago, Chile, mauricio.marin@usach.cl
- Dr. Roberto Uribe, Professor at University of Magallanes, Punta Arenas, Chile, roberto.uribe@umag.cl
- Dr. Verónica Gil-Costa, Professor at University of San Luis, San Luis, Argentina, gvcosta@unsl.edu.ar
- Dr. Pavel Zezula, Professor at Masaryk University, Brno, Czech Republic, zezula@fi.muni.cz

Ricardo J. Barrientos
May 2023.