

# Curriculum Vitae

## Personal Information

- **Name:** Gonzalo Navarro
- **Nationality:** Argentina
- **Year of birth:** 1969
- **Address:** Beauchef 851 - Santiago - Chile
- **Phone:** +56-2-9784952
- **Civil status:** Married
- **E-mail:** gnavarro@dcc.uchile.cl
- **Web page:** <http://www.dcc.uchile.cl/gnavarro>
- **Degree:** PhD. in Computer Science
- **Position:** Full Professor, Dept. of Computer Science, Universidad de Chile
- **Areas of interest:** Design and Analysis of Algorithms, Text Databases, Metric Databases, Compression.

## Studies

### Formal Studies

- (1995-1998) PhD. in Computer Science, Faculty of Physics and Mathematical Sciences, Universidad de Chile  
Score: 7.0 (range 1.0 – 7.0)  
Thesis: “Approximate Text Searching”  
Advisor: Prof. Ricardo Baeza-Yates (Universidad de Chile).
- (1994-1995) MSc. in Computer Science,  
Faculty of Physics and Mathematical Sciences, Universidad de Chile  
Score: 6.99 (range 1.0 – 7.0)  
Thesis: “A Language for Queries on Structure and Contents of Textual Databases”  
Advisor: Prof. Ricardo Baeza-Yates (Universidad de Chile).
- (1986-1993) Licenciante in Informatics (5 years plus thesis), Faculty of Exact Sciences, Universidad Nacional de La Plata (UNLP, Argentina)  
Score: 9.76 (range 1 – 10)  
Thesis: “MediaCore: A Multimedia Interface Composition Toolkit”  
Advisor: Prof. Jorge Sanz (IBM Argentina and Almaden Research Center).

- (1989-1992) Licenciata in Informatics (5 years plus thesis), Latin American School of Informatics (ESLAI, Argentina)  
Score: 9.83 (range 1 – 10)  
Thesis: “A Study on Control Structures”  
Advisor: Prof. Jorge Aguirre (ESLAI and Universidad de Buenos Aires, Argentina).

## Scholarships

- (1999) Scholarship given by Fundación Andes (Chile), to make a Post-Doctorate in Helsinki and Paris during the 2nd semester of 1999 (9 projects selected out of 32). Also funded by the Academy of Finland and ECOS/Conicyt Project 99/035.
- (1994) Scholarship given by Universidad de Chile, to take the 2nd semester of the MSc. in Computer Science.
- (1991) Research assistanship given by IBM Argentina, to research in Multimedia and Hypermedia, subject of my Licenciata Thesis at Universidad Nacional de La Plata (UNLP, Argentina).
- (1989-1992) Scholarship given by the Latin American School of Informatics (ESLAI, Argentina) to take the de Lic. in Informatics. Obtained by a curriculum analysis and a selective admission exam (2nd. place among 300 applicants).

## Distinctions

- (1996) First prize in the III CLEI-UNESCO Contest of Latin American Computer Science MSc. Theses (developed during 1995).
- (1992) Best score at the Faculty of Exact Sciences, Universidad Nacional de La Plata (UNLP), Argentina (9.76).

## Research

### Research Stays

- (1999-2000) Postdoctoral stay, University of Helsinki, Finland, and Institut Gaspard Monge (IGM), Université de Marne-la-Vallée, France. Areas: flexible string matching and compression. Inviting professors: Esko Ukkonen (Univ. Helsinki) and Maxime Crochemore (IGM).
- (1996-) Short invited research stays at several research centers: Universitat Politècnica de Catalunya (UPC, Spain), Universidade Federal de Minas Gerais (UFMG, Belo Horizonte, Brazil), Universidad de Valladolid (Spain), Universidad Michoacana (Morelia, Michoacán, Mexico), Institut Gaspard Monge (IGM, Université de Marne-la-Vallée, France), University of Joensuu (Finland), Universidad Nacional de San Luis (UNSL, Argentina), University of Helsinki (Finland), University of Tampere (Finland), Kyushu University (Japan),

Universidade da Coruña (Spain), Universidade Técnica de Lisboa (Portugal), and. University of Waterloo (Waterloo, Canada).

## Research Projects

- (2018-2023) Associate researcher in the *Millennium Institute for Foundational Research on Data*, from the Millennium Scientific Initiative.
- (2017-2020) Main Researcher in the Fondecyt Project 1-170048, *Compressed Data Structures for Highly Repetitive Datasets*. The project was ranked 1st among 120 applications.
- (2016-2017) Advisor member in a *Google Research Award Latin America* project, in association with the MSc student Joshimar Córdova (2016) and Patricio Huepe (2017).
- (2016-2019) Responsible for the University of Chile in the project *Bioinformatics and Information Retrieval Data Structures Analysis and Design (BIRDS)*, with funding from the European Union (RISE projects) and formed by 7 universities.
- (2014-2019) Key researcher of the *Center for Biotechnology and Bioengineering*, with basal funding from Concicyt, Chile.
- (2014-2017) Main Researcher in the Fondecyt Project 1-140796, *Fundamental Data Structures for Managing Large Datasets*. The project was ranked 1st among 71 applications.
- (2013-2017) Associate researcher in Millenium Nucleus *Information and Coordination in Networks*, Mideplan, Chile.
- (2011-2014) Main Researcher in the Fondecyt Project 1-110066, *Compact Data Structures for Information Retrieval*. The project was ranked 5th among 60 applications.
- (2010) Responsible of the Chilean side of the project “Development of a data integration platform for pathway-analysis that incorporates compressed data structures and approximate pattern matching on biological sequences” of cooperation between the University of Chile and the Katholieke Universiteit Leuven, Belgium.
- (2009-2012) Researcher in Fondecyt Project 1-090037 (Miguel Reyes, head), *The Monoaminergic "Receptophore". Similarities among the Active Sites of Monoaminergic Target Proteins, based on their Crystal Structures: Implications for the Development of Selective and Non-Selective Ligands*.
- (2008-2012) Key researcher in Millenium Institute *Cellular Dynamics and Biotechnology*, Mideplan, Chile.
- (2008-2011) Main Researcher in the Fondecyt Project 1-080019, *Memory-Hierarchy-Aware Data Structures*. The project was ranked 1st among 69 applications.
- (2006-2009) Main researcher in project *Compact Data Structures*, funded by Yahoo! Research Latin America. Since 2008 the project depends directly on Yahoo! Research.

- (2003-2009) Director of the research project *Advanced Database Technologies* at Universidad Nacional de San Luis, Argentina.
- (2002-2008) Researcher (alternate director since 2004 and director since 2006) in Millennium Nucleus *Center for Web Research*, Project P01-029-F (2002-2004) and P04-067-F (2005-2007), Mideplan, Chile. See <http://www.cwr.cl>.
- (2005-2008) Main Researcher in the Fondecyt Project 1-050493, *Compressed Text Databases*. The project was ranked 2nd among 90 applications.
- (2003-2006) Researcher in project *Advanced Tools for the Implementation of Digital Libraries* funded by CICYT (Spain), with Universidade da Coruña and Universidad de Valladolid, Spain.
- (2001-2005) Coordinator of Project CYTED VII.19 RIBIDI (Iberoamerican), *Information Retrieval and Digital Libraries*, where 20 institutions from 7 countries participated. See <http://www.dcc.uchile.cl/gnavarro/ribidi> (in Spanish).
- (2002-2005) Main researcher in the Fondecyt Project 1-020831, *Fast, Flexible and Economical Text Searching*. The project was ranked 8th among 74 applications.
- (2002) Director of the research project *Databases and Model Theory* at Universidad Nacional de San Luis, Argentina.
- (1999-2002) Researcher in ECOS/Conicyt (Chile/France) Project 99/035 (Maxime Crochemore and Ricardo Baeza-Yates, heads), *Pattern Matching and Applications*.
- (1997-2002) Researcher in SIAM (Brazil) Project (Nivio Ziviani, head), *Information Systems for Mobile Environments*.
- (2000-2002) Main researcher in the Fondecyt Project 1-000929, *Searching for Similar Objects*. The project was ranked 9th among 63 applications.
- (1999-2002) Researcher in Fondecyt (Chile) Project 1-990627 (Ricardo Baeza-Yates, head), *Design and Analysis of Sequential and Parallel Algorithms and their Applications*.
- (1997-2000) Researcher in Project CYTED VII.3 AMYRI (Iberoamerican, Ricardo Baeza-Yates, head), *Environment for Information Manipulation and Retrieval*.
- (1996-1999) Researcher in Fondef (Chile) Project 96-1064 (Eduardo Vera, head), *Infocommunication in High Bandwidth Networks*.
- (1995-1998) Researcher in Fondecyt (Chile) Project 1-950622 (Ricardo Baeza-Yates, head), *Data Structures: Design, Analysis and Applications*.
- (1996-1997) Researcher in Fondecyt (Chile) Project 1-960881 (Patricio Poblete, head), *Exact and Similarity Searching: Algorithms, Analysis Techniques and Visualization*.

- (1993-1995) Researcher in Fondecyt (Chile) Project 1-93-0765 (Ricardo Baeza-Yates, head), *Textual Databases: Algorithms, Interfaces and Applications*.
- (1994) MSc. student in Fondecyt (Chile) Project 1-940271 (Patricio Poblete, head), *Analysis and Visualization of Data Structures*.
- (1991-1993) Resident Researcher at the Computer Research and Advanced Applications Group (CRAAG/GICAA), a research group of IBM Argentina specialized in image processing, parallelism and multimedia, headed by Jorge Sanz (IBM Argentina and University of Illinois at Urbana-Champaign, USA).

## Distinctions

- (2018) ACM Distinguished Member, distinction given by the Association for Computing Machinery to at most 10% of its members for achieving a significant impact on the computing field.
- (2018) Capocelli Prize in the *28th Data Compression Conference (DCC)*, for the article with my student Adrián Gómez-Brandón.
- (2017) *Google Research Award Latin America*, with my student Patricio Huepe.
- (2017) Alberto Apostolico Best Paper Award in the *28th Annual Symposium on Combinatorial Pattern Matching (CPM)*, for the article “Path queries on functions”, with Travis Gagie and Meng He.
- (2016) Article “On compressing and indexing repetitive sequences”, with Sebastian Kreft, included in the Virtual Special Issue “40th Anniversary of Theoretical Computer Science – Top Cited Articles: 1975-2014”, which collects the most cited articles of each year.
- (2016) *Highest Cited Paper Award* de Elsevier, for the articles “On compressing and indexing repetitive sequences” and “Colored range queries and document retrieval”, which are among the 5 most cited 2013 papers in *Theoretical Computer Science* in the 2 following years. Similar award for the article “DACs: Bringing direct access to variable-length codes”, among the 5 most cited in *Information Processing and Management*, and “Improved Compressed Indexes for Full-Text Document Retrieval”, among the 5 most cited in *Journal of Discrete Algorithms*.
- (2016) *Google Research Award Latin America*, with my student Joshimar Córdova.
- (2016) Capocelli Prize in the *26th Data Compression Conference (DCC)*, for the article with my student Héctor Ferrada.
- (2013) Capocelli Prize in the *23rd Data Compression Conference (DCC)*, for the article with my student Roberto Konow.
- (2012) Best Student Paper Award in the *29th International Symposium on String Processing and Information Retrieval (SPIRE)*, for the paper with my student Cecilia Hernández.

- (2008) Award Scopus Chile 2008 in Computer Science, Mathematics and Engineering , awarded by Elsevier to researchers with high scientific productivity, with the support of Conicyt (Chile).
- (1997) Coauthor of “Large Text Searching Allowing Errors” (Márcio Araújo, Gonzalo Navarro, and Nivio Ziviani), awarded the best software tool at *SBES’97* (Brazilian Symposium on Software Engineering) and 4th prize at the 4th CLEI-UNESCO Contest of Latin American Computer Science MSc. Theses. The student is Márcio Araújo and the advisor is Nivio Ziviani.

### Invited Talks and Tutorials

- (2016) Tutorial “Compact Data Structures”, in the *12th Latin American Theoretical Informatics Symposium (LATIN)*, Ensenada, Mexico.
- (2015) Keynote talk at the *XLI Latin American Conference on Informatics (CLEI)*, Arequipa, Peru. Title: “Compact Data Structures”.
- (2014) Keynote talk at the *21st International Symposium on String Processing and Information Retrieval (SPIRE)*, Ouro Preto, Brazil. Title: “Doing SP & IR on Repetitive Collections”.
- (2014) Keynote talk at the *11th Latin American Theoretical Informatics Symposium (LATIN)*, Montevideo, Uruguay. Title: “Encoding Data Structures”.
- (2012) Tutorial “Space-Efficient Data Structures II”, with Francisco Claude, at the *19th International Conference on String Processing and Information Retrieval (SPIRE)*, Cartagena, Colombia.
- (2012) Keynote talk at the *23rd International Workshop on Combinatorial Algorithms (IWOCA)*, Tamil Nadu, India. Title: “Indexing Highly Repetitive Collections”.
- (2012) Joint keynote talk at the *23rd Annual Symposium on Combinatorial Pattern Matching (CPM)* and the *13th Scandinavian Symposium and Workshops on Algorithm Theory (SWAT)*, Helsinki, Finland. Title: “Wavelet Trees for All”.
- (2011) Tutorial “Space-Efficient Data Structures”, with Francisco Claude, at the *18th International Conference on String Processing and Information Retrieval (SPIRE)*, Pisa, Italy.
- (2011) Tutorial “The Miracle of Self-Indexing”, in the *1st Research Workshop and Thematic School of RedTIC, CONACyT, Puebla, Mexico*. Videoconference.
- (2010) Keynote talk at the *17th International Symposium on String Processing and Information Retrieval (SPIRE)*, Los Cabos, Mexico. Title: “Compact Data Structures for IR: The Time Has Come”.

- (2010) Tutorial “Self-Indexing XML” invited at the *IV Alberto Mendelzon Workshop on Foundations of Data Management (AMW)*, Buenos Aires, Argentina.
- (2009) Keynote talk at the *Prague Stringology Conference (PSC)*, Prague, Czech Republic. Title: “Combining Text Compression and String Matching: The Miracle of Self-Indexing”.
- (2009) Keynote talk at the *2nd International Workshop on Similarity Search and Applications (SISAP)*, Prague, Czech Republic. Title: “Analyzing Metric Space Indexes: What For?”.
- (2009) Keynote talk at the *14th International Conference on Implementation and Application of Automata (CIAA)*, Sydney, Australia. Title: “Implementation and application of automata in string processing”.
- (2008) Keynote talk at the *Third Workshop on Compression, Text, and Algorithms*, satellite event of *SPIRE 2008*. Title: “Indexing LZ77: The Next Step in Self-Indexing”.
- (2008) Invited survey talk at *Dagstuhl Seminar on Structure-Based Compression of Complex and Massive Data*, Germany. Title: “Practical Search on Compressed Text”.
- (2007) Tutorial “Compact Data Structures”, invited at the *Mexican Computing Meeting (ENC)*, Morelia, Mexico.
- (2006) Invited talk at the *Bertinoro Meeting on Space-Conscious Algorithms*, Bertinoro, Italy. Title: “Dynamic Compressed Sequences and Applications”. Event constituted by invited talks.
- (2006) Invited talk at the Workshop *The Web as a Database*, Santiago, Chile, organized by the Center for Web Research and Yahoo! Research Center Latin America. Title: “Succinct Data Structures”. Event constituted by invited talks.
- (2005) Keynote talk at the *12th International Symposium on String Processing and Information Retrieval (SPIRE 2005)*, Buenos Aires, Argentina (invited by the Steering Committee). Title: “When music meets geometry: on algorithmic aspects of music retrieval”.
- (2003) Keynote talk at the *Mexican International Conference on Computer Science*, Tlaxcala, Mexico. Title: “Current challenges in textual databases”.
- (2001) Keynote talk at the *Chilean Computing Week*, Punta Arenas, Chile. Title: “Towards the new textual database: small, fast and flexible”.
- (1992-) Invited talks in several research centers: Universidad Nacional de La Plata (UNLP, Argentina), Universidad Austral de Chile (Valdivia, Chile), Universidade Federal de Minas Gerais (UFMG, Belo Horizonte, Brazil), Universidad de Valladolid (Spain), Universidad Michoacana (Morelia, Mexico), Center for Research in Mathematics (CIMAT, Guanajuato, Mexico), Gaspard Monge Institute (IGM, Université de Marne-la-Vallée, France), Laboratory of Research in Informatics (LRI, Université de Paris Sud, France), University of Helsinki (Finland), University of Joensuu (Finland), University of Tampere (Finland), Helsinki University of Technology (Finland), Laboratory of Algorithmic Informatics

: Fundamentals and Applications (LIAFA, Université de Paris 7, Paris, France), Kyushu University (Fukuoka, Japan), Universidade da Coruña (A Coruña, Spain), Universidad Nacional de San Luis (UNSL, Argentina), Universidad Católica de Chile, Universidad de Playa Ancha (Valparaíso, Chile), Universidad de Concepción (Concepción, Chile), Yahoo! Research Center Barcelona (Spain), Universidade Técnica de Lisboa (Portugal), University of Waterloo (Canada), and Universidad de Chile.

## Editorial Boards and Steering Committees

- (2016-) Editor in Chief of *ACM Journal of Experimental Algorithmics*.
- (2012-) Member of the Editorial Board of *Information Systems*.
- (2009-2016) Member of the Editorial Board of *ACM Journal of Experimental Algorithmics*.
- (2008-2013) Member of the Steering Committee of the *Latin American Theoretical Informatics (LATIN)*.
- (2008-2014) Co-founder and member of the Steering Committee of the *International Conference on Similarity Search and Applications (SISAP)*, with Edgar Chávez. See [www.sisap.org](http://www.sisap.org).
- (2004-) Member of the Editorial Board of *Information Retrieval*.
- (2002,2006-2008) Member of the Steering Committee of *International Symposium on String Processing and Information Retrieval (SPIRE)*.

## Program Committee Chair and Guest Editor

- (2018) PC Co-chair of the *25th International Symposium on String Processing and Information Retrieval (SPIRE)*, Lima, Peru.
- (2018) PC Co-chair of the *29th Annual Symposium on Combinatorial Pattern Matching (CPM)*, Qingdao, China.
- (2018) Special Session Chair of the *28th Data Compression Conference (DCC)*, Snowbird, Utah. Subject: “Computation over Compressed Data”.
- (2018) PC Co-chair of the *25th International Symposium on String Processing and Information Retrieval (SPIRE)*, Lima, Peru.
- (2018) Guest editor (with Travis Gagie) of a Special Issue in *Algorithmica* dedicated to selected papers from recent *DCC* and *SPIRE* conferences. Springer.
- (2018) Guest editor (with Evangelos Kranakis) of a Special Issue in *Algorithmica* dedicated to selected papers from *LATIN 2016*. Springer.
- (2016) Special Session Chair of the *26th Data Compression Conference (DCC)*, Snowbird, Utah. Subject: “Compressed Data Structures”.



- (2016) PC Co-chair of the *12th Latin American Theoretical Informatics Symposium (LATIN)*, Ensenada, Mexico.
- (2015) Area Editor of *Encyclopedia of Algorithms*, 2nd edition, Springer. Ming-Yang Kao, editor.
- (2014) Guest editor (with Vladimir Pestov) of a Special Issue in *Information Systems* dedicated to selected papers from *SISAP 2012*. Elsevier.
- (2014) Special Session Chair of the *24th Data Compression Conference (DCC)*, Snowbird, Utah. Subject: “Compressed Data Structures”.
- (2012) PC Co-chair of the *5th International Workshop on Similarity Search and Applications (SISAP)*, Toronto, Canada.
- (2010) Guest editor (with Edgar Chávez) of a Special Issue of *ACM SIGSPATIAL* dedicated to *Metric Space Searching*. ACM Press.
- (2008) Guest editor (with Edgar Chávez) of a Special Issue of the *Journal of Discrete Algorithms* dedicated to selected papers from *SISAP 2008*. Elsevier.
- (2008) PC Co-chair of the *1st International Workshop on Similarity Search and Applications (SISAP)*, Cancun, Mexico.
- (2007) PC Chair of track *Scalable Pattern Recognition* within the *8th Mexican International Conference on Computer Science (ENC 2007)*, Puebla, Mexico.
- (2006) Area Editor of *Encyclopedia of Algorithms*, Springer. Ming-Yang Kao, editor.
- (2006) PC Co-chair of *4th IFIP International Conference on Theoretical Computer Science (IFIP TCS)*, track TC1 of the *19th World Computer Congress (WCC 2006)*, Santiago, Chile.
- (2005) Posters PC Co-chair of *28th Annual International ACM SIGIR Conference on Research and Development in Information Retrieval*, Salvador, Brazil.
- (2005) PC Co-chair of the *12th International Symposium on String Processing and Information Retrieval (SPIRE)*, Buenos Aires, Argentina.
- (2004) PC Chair of *XXIV International Conference of the Chilean Computer Science Society (SCCC)*, Arica, Chile.
- (2001) PC Chair of *8th International Symposium on String Processing and Information Retrieval (SPIRE)*, Laguna de San Rafael, Chile.

## Workshop Organization

- (2019) Co-organizer of the *Dagstuhl Seminar 19241*, “25 Years of the Burrows-Wheeler Transform”, Saarbrücken, Germany.
- (2017) Co-organizer of the *Shonan Meeting “Computation over over Compressed Structured Data”*, Tokyo, Japan.
- (2016) Co-organizer of the *Dagstuhl Seminar 16431*, “Computation over Compressed Structured Data”, Saarbrücken, Germany.
- (2013) Co-organizer of the *Dagstuhl Seminar 13232*, “Indexes and Computation over Compressed Structured Data”, Saarbrücken, Germany.
- (2012) Workshops Chair of SPIRE 2012, Cartagena de Indias, Colombia.
- (2012) Organization of the *7th Workshop on Compression, Text, and Algorithms*, satellite of SPIRE 2012, Cartagena, Colombia.
- (2011) Organization of the *6th Workshop on Compression, Text, and Algorithms*, satellite of SPIRE 2011, Pisa, Italy.
- (2010) Organization of the *5th Workshop on Compression, Text, and Algorithms*, satellite of SPIRE 2010, Los Cabos, Mexico.
- (2007) Organization of the *2nd Workshop on Compression, Text, and Algorithms*, internal to the DCC, with 50% of international participation.
- (2005) Creation and organization of the *1st Workshop on Compression, Text, and Algorithms*, internal to the DCC, including international invited talks.

## Refereeing and Program Committees

- (1996-) Program Committee member of the *7th, 9th, 10th, and 13th–24th International Symposium on String Processing and Information Retrieval (SPIRE)* 2000, 2002, 2003, and 2006–2017; *International Database Engineering and Applications Symposium (IDEAS)* 2002 and 2003; *13th, 14th, 18th, 21st, 24th–26th, 28th and 30th Combinatorial Pattern Matching (CPM)* 2002, 2003, 2007, 2010, 2013–2015, 2017, and 2019; *26th, 27th, 31th, 34th–36th, and 38th–39th Annual International ACM SIGIR Conference on Research and Development in Information Retrieval* 2002, 2003, 2007, 2010–2012, and 2014–2015; *3rd and 5th Conference of Fun With Algorithms* 2004 and 2010; *7th Latin American Theoretical Informatics (LATIN)* 2006; *5th International Workshop on Efficient and Experimental Algorithms (WEA)* 2006; *15th, 23rd and 24th ACM Conference on Information and Knowledge Management (CIKM)* 2006, 2014 and 2015 (Seniors PC); *9th and 15th Workshop on Algorithm Engineering and Experiments (ALENEX)* 2007 and 2013; *16th and 17th International World Wide Web Conference (WWW)*, Search Track, 2007 and 2008; *18th, 19th, 26th and 29th International Workshop on Combinatorial Algorithms (IWOCA)* 2007, 2008, 2015 and 2018; *24th IEEE International Conference on Data Engineering (ICDE)*

2008; 18th to 29th Data Compression Conference (DCC) 2008–2019; 2nd to 4th and 6th to 9th International Workshop on Similarity Search and Applications (SISAP) 2009–2011 and 2013–2016; 38th International Colloquium on Automata, Languages and Programming (ICALP), track A 2011; 5th Alberto Mendelzon International Workshop on Foundations of Data Management (AMW) 2011; 5th International Conference on Language and Automata Theory and Applications (LATA) 2011; 17th ACM SIGKDD Conference on Knowledge Discovery and Data Mining (KDD) 2011; 20th and 26th Annual European Symposium on Algorithms (ESA), track B 2012 and 2018; 18th Annual International Computing and Combinatorics Conference (COCOON) 2012; 31st International Symposium on Theoretical Aspects of Computer Science (STACS) 2014; 14th Algorithms and Data Structures Symposium (WADS) 2015; 15th Scandinavian Workshop on Algorithm Theory (SWAT) 2016; 16th and 18th International Symposium on Experimental Algorithms (SEA) 2017 and 2019; 12th International Conference and Workshops on Algorithms and Computation (WALCOM) 2018; and several other national and regional ones.

- (1998-) Reviewer for journals (around 15-20 per year): *Journal of Computational Biology (JCB)*, *Journal of Discrete Algorithms (JDA)*, *Journal of Automata, Complexity and Languages (JACL)*, *Information Processing Letters (IPL)*, *Journal of Algorithms*, *Acta Informatica*, *ACM Transactions on Database Systems (TODS)*, *ACM Transactions on Information Systems (TOIS)*, *ACM Computing Surveys*, *Discrete and Applied Mathematics (DAM)*, *Fundamenta Informaticae (FI)*, *Theoretical Computer Science (TCS)*, *Pattern Recognition Letters (PRL)*, *Bioinformatics*, *IEEE Transactions on Multimedia*, *Transactions on Data and Knowledge Engineering (TKDE)*, *Information Sciences*, *Information Retrieval*, *IEEE Systems, Man and Cybernetics*, *IEEE Transactions on Information Theory*, *Pattern Recognition (PR)*, *IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI)*, *International Journal on Foundations of Computer Science (IJFCS)*, *ACM Journal of Experimental Algorithmics (JEA)*, *Algorithmica*, *ACM Transactions on Algorithms (TALG)*, *Information Systems*, *The International Journal on Very Large Data Bases (VLDBJ)*, *Information and Computation (I&C)*, *Journal of Computer Systems Science & Engineering (JCSSE)*, *IEEE Computer Graphics and Applications (CGA)*, *Mathematics in Computer Science (MCA)*, *Algorithms*, *SIAM Journal on Computing*, *IET Image Processing*, *Journal of Computational Geometry (JoCG)*, *IEEE Transactions on Computational Biology and Bioinformatics (TBB)*, *Journal of the ACM (JACM)*, *Communications of the ACM (CACM)*, *Networks*, and other minor ones.

## Publications

A list of publications sorted by category and year follows (abbreviations of conferences at the end of the curriculum). To give an idea of their impact, I give some statistics.

- As of May 2012, I am in position 2,290 among the most cited authors in Computer Science, according to *CiteSeerX* (<http://citeseer.ist.psu.edu/stats/authors>), and first among researchers resident in Chile.

- As of August 2014, there are over 2000 ISI citations to my ISI papers (excluding self-citations), and over 14000 in *Google Scholar* (<http://scholar.google.com>). My two most cited articles have 493 and 355 citations in ISI (1,629 and 1,123 in *Google Scholar*). My ISI papers received on average 17.3 citations from ISI.
- My  $h$ -number (maximum value such that a researcher has  $h$  papers cited at least  $h$  times) is 22 within the ISI system and 52 according to *Google Scholar*.
- As of August 2014, I am among the 60 most prolific authors in DBLP (<http://dblp.uni-trier.de/~mwagner/statistics/numberofpublicationperauthor.html>).
- As of August 2014, I am the only Latin American researcher among the 1000 most cited in the world, according to Arnetminer (<http://arnetminer.org/geo>).
- As of August 2014, my rank within Microsoft Academic (<http://academic.research.microsoft.com>) is 763 ( $h$ -index 36, 322 publications).

## Books

1. Gonzalo Navarro. *Compact Data Structures*. Cambridge University Press, 2016. 570 pages. ISBN 978-1-107-15238-0. (See site in [www.dcc.uchile.cl/gnavarro/CDSbook](http://www.dcc.uchile.cl/gnavarro/CDSbook).)
2. Gonzalo Navarro and Mathieu Raffinot. *Flexible Pattern Matching in Strings*. (Practical on-line search algorithms for texts and biological sequences.) Cambridge University Press, 2002. 280 pages. ISBN 0-521-81307-7. (See site and reviews at [www.dcc.uchile.cl/gnavarro/FPMbook](http://www.dcc.uchile.cl/gnavarro/FPMbook).) A Chinese version of this book appeared in 2007, as well as the softcover version of the original edition.

## Conference Proceedings

1. Travis Gagie, Alistair Moffat, Gonzalo Navarro, and Ernesto Cuadros (editors). *Proceedings of the 25th International Symposium on String Processing and Information Retrieval (SPIRE 2018)*, Lima, Peru, October 2018. Springer-Verlag LNCS Series, volume 11147.
2. Gonzalo Navarro, David Sankoff, and Binhai Zhu (editors). *Proceedings of the 29th Annual Symposium on Combinatorial Pattern Matching (CPM 2018)*, Qingdao, China, July 2018. LIPIcs Series, volume 105.
3. Evangelos Kranakis, Gonzalo Navarro, and Edgar Chávez (editors). *Proceedings of the 12th Latin American Symposium on Theoretical Informatics (LATIN 2016)*, Ensenada, Mexico, April 2016. Springer-Verlag LNCS Series, volume 9644.
4. Gonzalo Navarro and Vladimir Pestov (editors). *Proceedings of the 5th International Conference on Similarity Search and Applications (SISAP 2012)*, Toronto, Canada, August 2012. Springer-Verlag LNCS Series, volume 7404.

5. Edgar Chávez and Gonzalo Navarro (editors). *Proceedings of the 1st International Workshop on Similarity Search and Applications (SISAP 2008)*, Cancún, Mexico, April 2008. IEEE Computer Society Press. ISBN 978-0-7695-3454-1.
6. Martin Farach-Colton, Jesus Favela, Genoveva Vargas, Vibhu Mittal, and Gonzalo Navarro (editors). *Proceedings of the 8th Mexican International Conference on Computer Science (ENC 2007)*, Morelia, Mexico, September 2007. IEEE Computer Society Press.
7. Gonzalo Navarro, Leopoldo Bertossi, and Yoshiharu Kohayakawa (editors). *Proceedings of the 4th IFIP International Conference on Theoretical Computer Science (TCS 2006)*, Santiago, Chile, August 2006. Springer.
8. Mariano Consens and Gonzalo Navarro (editors). *Proceedings of the 12th International Symposium on String Processing and Information Retrieval (SPIRE 2005)*, Buenos Aires, Argentina, November 2005. Springer Lecture Notes in Computer Science, volume 3772.
9. Gonzalo Navarro (editor). *Proceedings of the XXIV International Conference of the Chilean Computer Science Society (SCCC 2004)*, Arica, Chile, November 2004. IEEE Computer Society Press.
10. Gonzalo Navarro (editor). *Proceedings of the 8th International Symposium on String Processing and Information Retrieval (SPIRE 2001)*, Laguna de San Rafael, Chile, October 2001. IEEE Computer Society Press.

### Chapters in Books with International Publisher

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21. Gonzalo Navarro, Ricardo Baeza-Yates and João Marcelo Arcoverde. Matchsimile: A Flexible Approximate Matching Tool for Personal Names Searching. *Proc. SBBD'2001*, pages 228–242.
22. Edgar Chávez and Gonzalo Navarro. Towards Measuring the Searching Complexity of Metric Spaces. *Proc. ENC'01*, volume II, pages 969–978.
23. Virna Cuquejo, Ricardo Baeza-Yates and Gonzalo Navarro. Algoritmos y Estructuras de Datos para Búsqueda de Objetos Similares. In Spanish. *Proc. Encuentro Chileno de Computación, JCC'00*.
24. Edgar Chávez, Gonzalo Navarro, Ricardo Baeza-Yates and José Luis Marroquín. A Unified Model for Similarity Searching. *Proc. ENC'99*.
25. Jesús Vegas, Pablo de la Fuente, Ricardo Baeza-Yates and Gonzalo Navarro. Un Lenguaje de Consulta Intuitivo para Textos Estructurados. In Spanish. *Proc. JI'98*, pages 527–536.
26. Virna Cuquejo, Ricardo Baeza-Yates and Gonzalo Navarro. Algoritmos y Estructuras de Datos para Búsqueda de Objetos Similares. In Spanish. *Proc. CITA'98*.

27. Ricardo Baeza-Yates and Gonzalo Navarro. A Practical Index for Text Retrieval Allowing Errors. *Proc. CLEI'97*. Volume 1, pages 273–282.
28. Gonzalo Navarro and Ricardo Baeza-Yates. A Class of Linear Algorithms to Process Sets of Segments. *Proc. CLEI'96*. Volume 2, pages 671–682.
29. Gonzalo Navarro and Ricardo Baeza-Yates. Expressive Power of a New Model for Structured Text Databases. *Proc. CLEI'95*. Volume 2, pages 1151–1162.

### **Theses**

1. Gonzalo Navarro. Approximate Text Searching. PhD thesis, Technical Report TR/DCC-98-14, DCC, Dec 1998. Abstract in *European Annals of Theoretical Computer Science (EATCS) Bulletin* 67, pages 278–282, Feb 1999.
2. Gonzalo Navarro. A Language for Queries on Structure and Content of Textual Databases. MSc. thesis, DCC, Apr 1995. Spanish abstract in R. Cardoso (editor), *Proc. CLEI'96*, volume 2, pages 1125-1144. First prize at III CLEI-UNESCO Contest of Latin American MSc. Computer Science Theses.
3. Gonzalo Navarro. MediaCore: a Multimedia Interface Composition Toolkit. Licenciante thesis, UNLP, 1993.
4. Gonzalo Navarro. Un Estudio sobre Estructuras de Control. Licenciante thesis, ESLAI, 1992. In Spanish.

## **Extension Activities and Academic Administration**

### **Professional Societies**

- Member of ACM.
- Member of IEEE Computer Society (until 2011).
- Member of the Chilean Computer Science Society (SCCC).

### **Project Coordinations and Academic Consulting**

- (2018) Member of a promotion committee at the Charles University of Prague, Czech Republic.
- (2017-2018) External evaluator of promotions at Universidad Técnica Federico Santa María, Chile.
- (2017) Member of a promotion committee at the University of Haifa, Israel.
- (2014) External project evaluator for the Danish Council for Independent Research.

- (2013) External evaluator of researchers for the National Research Foundation of South Africa.
- (2012-2015) External project evaluator for the German-Israeli Foundation for Scientific Research and Development and for the Israeli Science Foundation.
- (2011) External project evaluator for Innova Chile – CORFO.
- (2010-2012) Member of the High Council of Scientific and Technological Development of Fondecyt Program, Conicyt, Chile.
- (2008-) External project evaluator for the Czech Science Foundation and the Academy of Sciences of the Czech Republic.
- (2006) Evaluator of projects for the Fund for Academic Innovation (MECESUP, Ministry of Education), Chile.
- (2006-2007) External project evaluator for City University of Hong Kong, and for the Research Grants Council of Hong Kong, China.
- (2005-2006) External project evaluator for CONICYT (Chilean national funding agency).
- (2004-2008) Alternate director of Millennium Nucleus *Center for Web Research*, Director since 2006. Project P01-029-F (2004) and P04-067-F (2005-2007), Mideplan, Chile. See <http://www.cwr.cl>.
- (2004-2006) Visiting Professor at Universidad Nacional de San Luis, Argentina.
- (2004-2016) Evaluator for Argentinian scientific funding organisms: FONCyT (Fund for Scientific and Technological Research, Ministry of Education, Science and Technology), and National Agency for Science and Technology.
- (2003) Evaluator of projects for the Competitive Fund of the Program for Improvement of Quality and Equity of High Education (MECESUP, Ministry of Education), Chile.
- (2002-2005) Coordinator of the Research Project VII.19 “RIBIDI: Information Retrieval and Digital Libraries”, of the CYTED Program (Ibero America).
- (2001-2004) Member of Study Group Engineering 1, to advise CONICYT (Chilen national funding agency) to evaluate projects and reports in the area.

## Administration

All within the Department of Computer Science, University of Chile.

- (2016-2017) Head of the Department Committee for the Accreditation of the PhD in Computer Science program.
- (2016-) Head of the PhD Program.

- (2014-) Member of the Faculty Academic Appointments Committee.
- (2014-2016) Head of Departmental Evaluation Committee.
- (2014) Head of the Department Committee for the Accreditation of the Engineering in Computer Science career.
- (2011-2014) Member of the Faculty Academic Evaluation Committee.
- (2009-) Research Coordinator.
- (2009-) Member of the Department Council.
- (2009-) Member of the Postgraduate Committee.
- (2009-2011) Member of the Faculty Appeals Committee.
- (2009-2010) Member of the Departmental Evaluation Committee.
- (2007-2008) Head of Department.
- (2005-2006) Head of Departmental Evaluation Committee.
- (2005-2006) Alternate Head of Department.
- (2004) Member of Departmental Evaluation Committee.
- (2003-2006) Teaching Coordinator.
- (2003-2006) Member of Postgraduate Committee.
- (2002-2006) Member of Departmental Council.
- (2000-2006) Member of Teaching Committee.
- (1999-2002) Graduation Coordinator.
- (1995-1999) Library Coordinator.

## **Divuligation**

- “Bioinformatics: The threat and the promise of the data deluge”, divulgation talk to the students of last year of high school of Liceo 1, September 2016, and to the students of 7th grade of basic school to last year of high school of Colegio Montague de Pealolén, April 2017..
- “The data deluge and repetitivity: Our best enemy”, magazine *Bits de Ciencia*, number 13, pages 8–15, first semester of 2016.
- “Bioinformatics: The threat and the promise of the data deluge”, divulgation conference in the Chilean Academy of Science, August 2016.

- One-minute spots about research on bioinformatics, appeared in the information TV channel “TVN 24 Horas” during August 2016.
- “Information Theory”, magazine *Bits of Science*, number 9, pages 28–33, November 2013.
- Interviewed in magazine *Bits of Science*, number 5, pages 78–81, April 2011.
- “Compact Data Structures”, magazine *Bits of Science*, number 3, pages 2–8, November 2009.
- Diverse divulgation articles in column *Bits, Science, and Society*, of Terra.cl, since July 2009.
- Interview to Ricardo Baeza-Yates, magazine *Bits of Science*, number 2, pages 30–31, April 2009.
- Co-creator and member of the Editorial Board of the magazine *Bits of Science*, published by the DCC. Participation with an article in the first issue, August 2008.
- “Searching the Web”, chapter 4 (pages 51–62) in the book *How the Web Works*, published by the Center for Web Research, Santiago, Chile, 2008. Also, participation as a panelist, as director of the Center and the DCC, in the public presentation of the book, University of Chile, August 2008. The event was mentioned in several press releases and radio stations.
- Interview, as Head of Department, in *El Mercurio* (one of the main Chilean newspapers), March 24, 2008, page A14 (science and technology), about the position of the Department on the OOXML standard proposal.
- Opinion article “Data Standards and OOXML: today’s vote”, as Head of the DCC and on its behalf, in *La Nación* (nationwide newspaper), March 19, 2008, page 13.
- Interview, as Head of the Center for Web Research, in Radio University of Chile, 102.5 FM, March 18, 2008, 7:30 to 8:00 PM. With Claudio Gutierrez.
- Interview, with other 3 Faculty professors with a high number of ISI publications, in *Revista FCFM* (magazine of the Faculty of Physical and Mathematical Sciences, University of Chile), number 41, Summer 2008, “Passion for Research”, pages 22–25.
- Short interview, as Head of Department, in *La Tercera* (one of the main Chilean newspapers), January 12, 2007, page 7 of section “University Life”. In Spanish.
- Interview, as Head of the Center for Web Research, in Radio University of Chile, 102.5 FM, November 15, 2006, 7:00 to 7:30 PM.
- Interview, as Head of the Center for Web Research, in *Bioplanet* magazine (Chile), year 6, number 42, September 2006. “Center for Web Research: The Science of Finding it All”. pages 15–17. With Ricardo Baeza-Yates. In Spanish.
- Interview, as Teaching Coordinator of the Department, in the newspaper *Publmetro* (Chile), August 17 2006, section Admission 2006, page 6. In Spanish.



## Distinctions

- (2009) Included in the book “70 Stories of success in Innovation and Science”, published by the Ministry of Economy and several government research funding agencies, Chile, 2009. Chapter “Explorers of the virtual universe”, pages 62–63.

## Teaching

### Theses Advisor

- Currently advising 3 Postdocs, 7 PhD students and 2 MSc students at Universidad de Chile, Universidade da Coruña (Spain), and University of Brasilia (Brazil).
- (1997-) Advisor of 6 Postdocs, 6 PhD, 10 MSc and 14 Engineers at Universidad de Chile and UNSL.
- (1997-) Co-advisor of 12 PhD, 6 MSc and 12 Engineers, at Universidad de A Coruña (Spain), Universidad de Valladolid (Spain), Universidade Federal de Minas Gerais (UFMG, Belo Horizonte, Brazil), Universidad de Chile, Universidad de La Habana (Cuba), Universidad de San Luis (UNSL, Argentina), INAOEP (Mexico), and Universidad de Concepción (Chile).
- (1999-) External referee of 17 PhD. dissertations: Center for Research in Mathematics (1999, CIMAT, Guanajuato, Mexico), Polytechnic University of Catalunya (2003, Barcelona, Spain), Melbourne University (2003 and 2008, Australia), Universität Konstanz (2006, Germany), INRIA (2006, Sophia Antipolis, Francia), Universidade Técnica de Lisboa (2007, Portugal), Charles University in Prague (2010, Czech Republic), Università di Milani (2011, Italy), Università di Pisa (2012 and 2017, Italy), Universidade da Coruña (2014, Spain), Universidad de Concepción (2015 and 2016, Chile), University of Helsinki (2015, Finlandia), Universidad de Buenos Aires (2016, Argentina), and Università di Udine (2017, Italy). Examiner of two MSc. theses at RMIT (Australia) and PEDECIBA (Uruguay), and backup referee of two PhD. dissertations at RMIT (Australia). Participation in 7 PhD and 12 MSc committees at DCC. External referee for a habilitation process at Charles University Prague (2007, Czech Republic) and at Masaryk University (2011, Czech Republic).
- (2005-) Organization of *Algorithmic Wednesdays!*, a periodic meeting with my supervised students to discuss ideas related with their research subjects. It is also useful to discuss ideas related to their research, to let them practice their presentations to conferences, to have invited talks, and so on. The meetings are open and occasionally we have other attendees. The group of students under my supervision is also called *Algorithmic Wednesdays Group*. See <http://www.dcc.uchile.cl/gnavarro/algoritmos> (in Spanish).

Some of the MScs are now young professors at the University of Chile (Benjamin Bustos, PhD in Konstanz, Germany) and University of Magallanes (Chile, Roberto Uribe). The same happens with most of the PhDs: Universidad de A Coruña (Spain, Antonio Fariña, Susana Ladra

and Ana Cerdeira), Universidad de Valladolid (Spain, Joaquín Adiego), Universidade Federal do Amazonas (Brazil, Edleno de Moura), Universidad del Bío-Bío (Gilberto Gutiérrez), Universidad de Concepción (Cecilia Hernández), Universidad Michoacana (Mexico, Karina Figueroa), Universidad Técnica Federico Santa María (Diego Arroyuelo), Universidad Andrés Bello (Carlos Gómez), Universidad de Talca (Rodrigo Paredes), and Universidad Nacional de San Luis (Argentina, Nora Reyes).

## Distinctions

- (2013-2018) Advisor (and coauthor) of four students that obtained the best student paper award in conferences: Cecilia Hernández (SPIRE 2012), Roberto Konow (DCC 2013), Héctor Ferrada (DCC 2016), and Adrián Gómez-Brandón (DCC 2018).
- (2016-2017) Google Research Awards to fund financiar the MSc theses of Joshimar Córdova (2016) and Patricio Huepe (2017).
- (2008) Best teaching award at the DCC.
- (2003-2012) Advisor of five MSc. theses awarded in the CLEI-UNESCO Contest of Latin American Computer Science MSc. Theses: Rodrigo Paredes (2nd prize, 2003), Nora Reyes (5th prize, 2003), Benjamin Bustos (7th prize, 2003), Roberto Uribe (2nd prize, 2006), Sebastián Kreft (1st prize, 2011). Also, advisor of the PhD thesis that obtained the first prize in the Doctoral Consortium of the Mexican Computing Meeting (ENC) 2006 (Karina Figueroa), and the one that obtained the 1st Prize to the Best Doctoral Thesis in the field of Information Retrieval, awarded by the Spanish Society of Information Retrieval, SERI (Susana Ladra).

## Teaching Material

- (2018) Book (155 pages) for the course Design and Analysis of Algorithms, Department of Computer Science, University of Chile (DCC). See <http://www.dcc.uchile.cl/gnavarro/apunte2.html> (in Spanish).
- (2006) Book (175 pages) for the course Fundamentals of Computer Science, Department of Computer Science, University of Chile (DCC). See <http://www.dcc.uchile.cl/gnavarro/apunte.html> (in Spanish).
- (2000) Notes for the course Information Retrieval, DCC.
- (1996) Exercise Guide for the course Fundamentals of Computer Science, DCC.

## Created or Reformulated Courses

- (2007) Creation of the course “Compact Data Structures”, for the PhD program in Computer Science, DCC.

- (2003-2006) Head of the process for redesigning the undergraduate career in Computer Science, Dept. of Computer Science, University of Chile (DCC), as part of the global reform of the careers in the School of Engineering.
- (2005) Adaptation of the course Design and Analysis of Algorithms, of the undergraduate and MSc career, DCC.
- (2002) Complete redesign, with Claudio Gutiérrez, of the course Databases, of the undergraduate and MSc career, DCC.
- (2001) Creation of the courses “Fast and Flexible Text Searching” and “Searching in Metric Spaces”, for the PhD program in Computer Science, DCC.
- (1999) Restructuring of the course Fundamentals of Computer Science, of the undergraduate and MSc career, DCC.
- (1996-1998) Redesign of the homeworks of the course Design and Analysis of Algorithms, DCC. The homeworks became all different and the students were guided to publish the best ones in the national Computer Science conference.
- (1993) Cooperation in the redesign of the course Data Structures, of the undergraduate Computer Science career, Universidad Nacional de La Plata, Argentina.

### Regular Courses

- (2002-2004) Professor of “Databases”, for undergraduates and MSc. students at Dept. of Computer Science, Universidad de Chile (DCC).
- (2001-2005) Professor of PhD course “Fast and Flexible Text Searching”, at the Dept. of Computer Science, Universidad de Chile (DCC).
- (2001-2003) Professor of PhD course “Searching in metric spaces”, at the Dept. of Computer Science, Universidad de Chile (DCC).
- (2000-2001) Professor of “Information Retrieval”, for undergraduates and MSc. students at Dept. of Computer Science, Universidad de Chile (DCC).
- (2000-2001) Professor of “Algorithms and Data Structures”, for undergraduates and MSc. students at Dept. of Computer Science, Universidad de Chile (DCC).
- (1996-1998,2005-) Professor of “Design and Analysis of Algorithms”, for undergraduates and MSc. students at DCC.
- (1996-) Professor of “Fundamentals of Computer Science”, for undergraduates and MSc. students at DCC.
- (1995) Professor of “Computer Science I”, undergraduate course at DCC.

- (1988-95) Teaching assistant in several undergraduate courses: “Algorithms” (1994-95, DCC), “Compilers” (1994, DCC), “Data Structures” (1993, Universidad Nacional de La Plata, Argentina), “Algebra I” (1988, UNLP).

### Intensive Courses

- (2015) Tutorial “Compact Data Structures”, in the *X Summer School on Discrete Mathematics*, Valparaíso, Chile.
- (2009) Talk “Compressed Self-Indexes for Text”, at JCC 2009 as part of the Workshop “Emergent Topics on the Web” organized by Yahoo! Research Chile.
- (2008) Talk “Sequential Text Searching” given at Universidad Nacional de San Luis, Argentina, and Universidad de Pinar del Río, Cuba, as a part of the course “Algorithmic Foundations of the Web”, funded by AECI.
- (2008) Ibero American head of the project *Education for the New Millennium: Algorithmic Foundations of the Net*, funded by the Spanish Agency for International Cooperation (AECI), with the goal of giving intensive courses in Latin American universities.
- (2007) Intensive course of 15 hours about “Compact data structures”, given at Universidad Nacional de San Luis, Argentina.
- (2007) Tutorial “Compact Data Structures”, given at the Mexican Computing Meeting (ENC), 8 hours.
- (2007) Talk “Compression of Web Graphs”, at DCC as part of the Workshop “Emergent Topics on the Web” organized by the Center for Web Research.
- (2006) Talk “New Techniques for Text Compression”, at DCC as part of the Workshop “Emergent Topics on the Web” organized by the Center for Web Research.
- (2005) Talk “Efficient Searchable Natural Language Adaptive Compression”, at DCC as part of the “Workshop on Web Information Retrieval” organized by the Center for Web Research.
- (2005) Talk “Implementation of Search Engines I: Indexes and Compression”, at DCC as part of the Workshop “Emergent Topics on the Web” organized by the Center for Web Research.
- (2000) Intensive course of 15 hours about “Information retrieval: algorithms, data structures and applications to the Web”, given at the School of Informatics Sciences (ECI), Buenos Aires, Argentina.
- (1998) Intensive course of 45 hours, “Advanced Algorithms” given for the MSc. in Computer Science at Universidad Mayor de San Simón (UMSS, Cochabamba, Bolivia).

- (1997) Talk “Indices for Approximate Text Searching” given at *VI Ibero American Informatics Week*, Santa Cruz de la Sierra, Bolivia, as a part of an Information Retrieval course.
- (1997) Talk “Text Searching” given at *VI Ibero American Informatics Week*, Santa Cruz de la Sierra, Bolivia, as a part of an Information Retrieval course.
- (1983-85) Courses of informatics in several private institutions.

## Developments

- (2013) Data cleaning services for the elections roll, for the Civil and Identifications Registry (Chile), processing data from termination of convictions and death records.
- (2007) Development, with Karina Figueroa and Edgar Chávez (Universidad Michoacana, Mexico), of an open-source library for metric space searching, associated to *SISAP* conference. It can be downloaded from <http://www.sisap.org>.
- (2006) Development, with Paolo Ferragina (Università di Pisa, Italy) and students, of the *PizzaChili* site (<http://pizzachili.dcc.uchile.cl>, <http://pizzachili.di.unipi.it>), with implementations and testbeds for compressed text indexes.
- (2005 and 2007) Approximate search services to match Mideplan (Chile) addresses against clients of electric companies, country-wide.
- (2005) Approximate search services to match publications using paper titles and institutions, for *Conicyt* (Chile).
- (2004) Development of an approximate multipattern string search system, used by the company *WordTracker* (UK), [www.wordtracker.com](http://www.wordtracker.com).
- (2003-2004) Development of an approximate search system over structured text for *Reuna* (Chile), used for *Buscademia* (<http://www.uportal.cl/buscademia>), a site giving information on University careers. Project leader.
- (2002) Approximate search services to match company names, for *DICOM* (Chile).
- (2001-2002) Development of formulas and programs to estimate the number of cashier servers needed to guarantee maximum waiting times for *Banco del Estado* (Chile).
- (2000-) Development and maintenance of an approximate multipattern name search system, used by the company *Matchsimile* (Brazil), [www.matchsimile.com](http://www.matchsimile.com).
- (2000) Development, as part of my postdoctoral stay, of an online pattern matching software (*nrgrep*). The software is free and can be accessed from my Web page. It has been accepted by the Free Software Foundation to make up an important part of the new release of *Gnu Grep*.

- (1999) Development, as part of my postdoctoral stay, of an online algorithm for searching PROSITE patterns in proteins. This algorithm has been patented in France by the CNRS in August 2000 under the number B00011093.
- (1995-1998) Development of diverse indexing systems for plain and structured text databases, using inverted indexes. These systems have been used by several companies such as *Hypernet* (Chile), *Mercantil* (Chile), *TodoBR* (Brazil) and *TodoCL* (Chile), and are used in sites such as [www.reuna.cl](http://www.reuna.cl), [www.mercantil.com](http://www.mercantil.com), [www.todobr.com.br](http://www.todobr.com.br) and [www.todocl.cl](http://www.todocl.cl).
- (1995-1998) Development, as part of my PhD. thesis, of a prototype for online approximate text searching. The software is free and can be accessed from my Web page.
- (1996) Collaboration in the development of a software for semidefinite programming, in Maple, at Universitat Politècnica de Catalunya (UPC, Spain).
- (1994) Development, as part of my MSc. thesis, of a prototype to index and query textual databases with hierarchical structure.
- (1992-1994) Hired (since 1993, employee) by IBM Argentina for the development of advanced applications on optical recognition, storage, querying and interfaces related to images and databases.
- (1983-1994) Several commercial systems and consulting services.
- (1993) Development, as part of my Lic. thesis at Universidad Nacional de La Plata (UNLP, Argentina), of a prototype to compose multimedia interfaces on AIX, including a script language to describe the multimedia interfaces, audio and image servers, etc. This included participation in the development of optical character recognition software for the companies *Telefnica* and *Telecom* (Argentina), as well as manuscript orders for *Avon* (Argentina).
- (1995-) Development of an index for textual databases based on partial inverted indices.
- (1986-1993) Development of several systems as part of the courses at Latin American School of Informatics (ESLAI, Argentina) and Universidad Nacional de La Plata (UNLP, Argentina).
- (1991) Multimedia presentations over OS/2, using high level composition tools and audio and video hardware.

## Languages

**English:** fluent (TOEFL 1998: 650, range 310–677).

**Portuguese, Italian and French:** able to read technical texts.

## References

- Prof. Ricardo Baeza Yates, Universidad de Chile, rbaeza@dcc.uchile.cl
- Prof. Nivio Ziviani, Universidade Federal de Minas Gerais (UFMG), Belo Horizonte, Brazil, nivio@dcc.ufmg.br
- Prof. Esko Ukkonen, University of Helsinki, Finland, ukkonen@cs.helsinki.fi
- Prof. Gene Myers, Celera Genomics, Washington DC, USA, gene.myers@celera.com
- Prof. Maxime Crochemore, Gaspard Monge Institute, Université de Marne-la-Vallée, France, mac@univ-mlv.fr
- Prof. Paolo Ferragina, Università di Pisa, Italia, ferragin@di.unipi.it.
- Prof. Amihoud Amir, Bar-Ilan University, Israel, amir@macs.biu.ac.il.

## Abbreviations

**ALENEX:** Workshop on Algorithm Engineering and Experiments

**ALENEX'01:** 3rd ALENEX, Washington DC

**ALENEX'03:** 5th ALENEX, Baltimore

**ALENEX'06:** 8th ALENEX, Miami

**ALENEX'07:** 9th ALENEX, New Orleans

**ALENEX'10:** 12th ALENEX, Austin

**ALENEX'15:** 17th ALENEX, San Diego

**BIBE:** IEEE Conference on Bioinformatics and Bioengineering

**BIBE'10:** 10th BIBE, Philadelphia, USA

**CACIC:** Congreso Argentino de Ciencias de la Computación

**CACIC'02:** VIII CACIC, Buenos Aires, Argentina

**CACIC'03:** IX CACIC, La Plata, Argentina

**CACIC'05:** XI CACIC, Concordia, Argentina

**CBMI:** European Workshop on Content-Based Multimedia Indexing

**CBMI'99:** CBMI 1999, Toulouse, France

**CCCG:** Canadian Conference on Computational Geometry

**CCCG'12:** 24th CCCG, Charlottetown, Prince Edward Island, Canada

**CCCG'13:** 25th CCCG, Waterloo, Ontario, Canada

**CCP:** International Conference on Data Compression, Communications and Processing

**CCP'11:** 1st CCP, Palinuro, Italy

**CERI:** Congreso Español de Recuperación de Información.

**CERI'10:** I CERI, Madrid, Spain

**CERI'12:** II CERI, Valencia, Spain

**CIAA:** International Conference on Implementation and Application of Automata

**CIAA'09:** 14th CIAA, Sydney, Australia

**CIC:** Congreso Internacional de Computación, Mexico

**CIC'04:** XIII CIC, Mexico DF, Mexico

**CIKM:** ACM International Conference on Information and Knowledge Management

**CIKM'97:** 6th CIKM, Las Vegas, Nevada

**CIKM'06:** 15th CIKM, Arlington, Virginia

**CIKM'11:** 20th CIKM, Glasgow, Scotland  
**CITA:** Congreso Iberoamericano de Telemática  
**CITA'98:** CITA 1998, Asunción, Paraguay  
**CLEI:** Centro Latinoamericano de Estudios en Informática  
**CLEI'95:** XXI Conferencia CLEI, Canela, Brazil  
**CLEI'96:** XXII Conferencia CLEI, Bogotá, Colombia  
**CLEI'97:** XXIII Conferencia CLEI, Valparaíso, Chile  
**CLEI'02:** XXVIII Conferencia CLEI, Montevideo, Uruguay  
**CLEI'09:** XXXV Conferencia CLEI, Pelotas, Brazil  
**CONIELECOMP:** International Conference on Electronics, Communications, and Computers  
**CONIELECOMP'05:** 15th CONIELECOMP, Puebla, Mexico  
**CPM:** Annual Symposium on Combinatorial Pattern Matching  
**CPM'96:** 7th CPM, Laguna Beach, USA  
**CPM'97:** 8th CPM, Aarhus, Denmark  
**CPM'98:** 9th CPM, New Jersey, USA  
**CPM'99:** 10th CPM, Warwick, UK  
**CPM'00:** 11th CPM, Montreal, Canada  
**CPM'01:** 12th CPM, Jerusalem, Israel  
**CPM'02:** 13th CPM, Fukuoka, Japan  
**CPM'03:** 14th CPM, Morelia, Mexico  
**CPM'04:** 15th CPM, Istanbul, Turkey  
**CPM'05:** 16th CPM, Jeju Island, Korea  
**CPM'06:** 17th CPM, Barcelona, Spain  
**CPM'07:** 18th CPM, London, Canada  
**CPM'08:** 19th CPM, Pisa, Italy  
**CPM'10:** 21st CPM, New York, USA  
**CPM'11:** 22nd CPM, Palermo, Italy  
**CPM'12:** 23rd CPM, Helsinki, Finland  
**CPM'13:** 24th CPM, Karlsruhe, Germany  
**CPM'14:** 25th CPM, Moscow, Russia  
**CPM'15:** 26th CPM, Ischia Island, Italy  
**CPM'17:** 28th CPM, Warsaw, Poland  
**DCC:** Data Compression Conference  
**DCC'01:** 11th DCC, Snowbird, USA  
**DCC'04:** 14th DCC, Snowbird, USA  
**DCC'08:** 18th DCC, Snowbird, USA  
**DCC'10:** 20th DCC, Snowbird, USA  
**DCC'12:** 22nd DCC, Snowbird, USA  
**DCC'13:** 23rd DCC, Snowbird, USA  
**DCC'14:** 24th DCC, Snowbird, USA  
**DCC'15:** 25th DCC, Snowbird, USA  
**DCC'16:** 26th DCC, Snowbird, USA  
**DCC'17:** 27th DCC, Snowbird, USA  
**DCC'18:** 28th DCC, Snowbird, USA  
**JCC:** Jornadas Chilenas de Computación  
**JCC'00:** VIII JCC, Santiago, Chile  
**JCC'03:** XI JCC, Chillán, Chile  
**JCC'04:** XII JCC, Arica, Chile  
**JCC'04:** XIII JCC, Valdivia, Chile  
**JCC'09:** XVIII JCC, Santiago, Chile



**JCC'10:** XIX JCC, Antofagasta, Chile  
**ECDL:** European Conference on Research and Advanced Technology for Digital Libraries  
**ECDL'05:** 9th ECDL, Vienna, Austria  
**ECDL'09:** 13th ECDL, Corfu, Greece  
**ECIR:** European Conference on Information Retrieval Research  
**ECIR'03:** 25th ECIR, Pisa, Italy  
**ENC:** Encuentro Nacional de Computación, México  
**ENC'99:** ENC 1999, Pachuca, Hidalgo, México  
**ENC'01:** ENC 2001, Aguascalientes, México  
**ENC'05:** ENC 2005, Puebla, México  
**ENC'07:** ENC 2007, Morelia, México  
**ESA:** Annual European Symposium on Algorithms  
**ESA'95:** 3rd ESA, Corfu, Greece  
**ESA'10:** 18th ESA, Liverpool, UK  
**ESA'11:** 19th ESA, Saarbrücken, Germany  
**ESA'12:** 20th ESA, Ljubljana, Slovenia  
**ESA'13:** 21st ESA, Sophia-Antipolis, France  
**ESA'14:** 22nd ESA, Wroclaw, Poland  
**EuroPar:** International Conference on Parallel and Distributed Computing  
**EuroPar'03:** 9th EuroPar, Klagenfurt, Austria  
**FSTTCS:** Annual Conference on Foundations of Software Technology and Theoretical Computer Science  
**FSTTCS'14:** 34th FSTTCS, New Delhi, India  
**FUN:** Conference on Fun with Algorithms  
**FUN'04:** 3rd FUN, Isola d'Elba, Italy  
**FUN'10:** 5th FUN, Ischia Island, Italy  
**GIS:** ACM International Symposium on Advances in Geographic Information Systems  
**GIS'05:** 13th ACM GIS, Bremen, Germany  
**ICCS:** International Conference on Computational Science  
**ICCS'06:** 6th ICCS, Reading, UK  
**ICDE:** International Workshop on Data Engineering  
**ICDE'08:** 24th ICDE, Cancun, Mexico  
**ICDE'10:** 26th ICDE, Long Beach, California, USA  
**IFIP TCS:** IFIP International Conference on Theoretical Computer Science  
**IFIP TCS'00:** 1st IFIP TCS, Sendai, Japan  
**IFIP TCS'06:** 4th IFIP TCS, Santiago, Chile  
**ISAAC:** International Symposium on Algorithms and Computation  
**ISAAC'03:** 14th ISAAC, Kyoto, Japan  
**ISAAC'04:** 15th ISAAC, Hong Kong, China  
**ISAAC'05:** 16th ISAAC, Hainan, China  
**ISAAC'10:** 21st ISAAC, Jeju Island, Korea  
**ISAAC'11:** 22nd ISAAC, Yokohama, Japan  
**ISAAC'13:** 24th ISAAC, Hong Kong, China  
**ISAAC'14:** 25th ISAAC, Jeonju, Korea  
**ISAAC'17:** 28th ISAAC, Phuket, Thailand  
**ISAAC'18:** 29th ISAAC, Jiaoxi, Taiwan  
**IWOCA:** International Workshop on Combinatorial Algorithms  
**IWOCA'07:** 18th IWOCA, Newcastle, Australia  
**IWOCA'12:** 23rd IWOCA, Madurai, India  
**IWPAAMS:** International Workshop on Practical Applications of Agents and Multiagent Systems  
**IWPAAMS'03:** 2nd IWPAAMS, Valladolid, Spain

**JBIDI:** Jornadas de Bibliotecas Digitales, Spain  
**JBIDI'03:** IV JBIDI, Alicante, Spain  
**JI:** Jornadas de Informática, Spain  
**JI'98:** IV JI, Las Palmas de Gran Canaria, Spain  
**JISBD:** Jornadas de Ingeniería de Software y Bases de Datos, Spain  
**JISBD'03:** VIII JISBD, Alicante, Spain  
**JISBD'04:** IX JISBD, Málaga, Spain  
**JISBD'08:** XIII JISBD, Gijón, Spain  
**JISBD'09:** XIV JISBD, San Sebastián, Spain  
**JISBD'11:** XVI JISBD, A Coruña, Spain  
**LATIN:** International Symposium of Latin American Theoretical Informatics  
**LATIN'95:** 2nd LATIN, Valparaíso, Chile  
**LATIN'98:** 3rd LATIN, Campinas, Brazil  
**LATIN'02:** 5th LATIN, Cancun, Mexico  
**LATIN'04:** 6th LATIN, Buenos Aires, Argentina  
**LATIN'06:** 7th LATIN, Valdivia, Chile  
**LATIN'08:** 8th LATIN, Buzios, Brazil  
**LATIN'10:** 9th LATIN, Oaxaca, Mexico  
**LATIN'18:** 13th LATIN, Montevideo, Uruguay  
**MFCS:** International Symposium on Mathematical Foundations of Computer Science  
**MFCS'09:** 34th MFCS, Vysoké Tatry, Slovakia  
**MICAI:** Mexican International Conference on Artificial Intelligence  
**MICAI'05:** 4th MICAI, Monterrey, Mexico  
**PSC:** Prague Stringology Conference  
**PSC'03:** 8th PSC, Prague, Czech Republic  
**PSC'05:** 10th PSC, Prague, Czech Republic  
**PSC'06:** 11th PSC, Prague, Czech Republic  
**PSC'09:** 14th PSC, Prague, Czech Republic  
**PSI:** International Conference on Perspectives of System Informatics  
**PSI'06:** 6th PSI, Novosibirsk, Russia  
**RAID:** International Workshop on the Recent Advances in Intrusion Detection  
**RAID'00:** 3rd RAID, Toulouse, France  
**RECOMB:** International Conference on Computational Molecular Biology  
**RECOMB'01:** 5th RECOMB, Montreal, Canada  
**RECOMB'09:** 13th RECOMB, Tucson, Arizona, USA  
**RIAO:** RIAO International Conference  
**RIAO'10:** 9th RIAO, Paris, France  
**SBBD:** Brazilian Symposium on Databases  
**SBBD 2001:** XVI SBBD, Rio de Janeiro, Brazil  
**SCCC:** International Conference of the Chilean Computer Science Society  
**SCCC'94:** XIV SCCC, Concepción, Chile  
**SCCC'98:** XVIII SCCC, Antofagasta, Chile  
**SCCC'01:** XXI SCCC, Punta Arenas, Chile  
**SCCC'02:** XXII SCCC, Copiapó, Chile  
**SCCC'03:** XXIII SCCC, Talca, Chile  
**SCCC'04:** XXIV SCCC, Arica, Chile  
**SCCC'12:** XXXII SCCC, Valparaíso, Chile  
**SEA:** International Symposium on Experimental Algorithms  
**SEA'10:** 9th SEA, Ischia Island, Italy  
**SEA'11:** 10th SEA, Colimpari Chania, Greece

**SEA'12:** 11th SEA, Bordeaux, France  
**SEA'14:** 13th SEA, Copenhagen, Denmark  
**SEA'16:** 15th SEA, Saint Petersburg, Russia  
**SeCoGIS:** International Workshop on Semantic and Conceptual Issues in GIS  
**SeCoGIS'09:** 3rd SeCoGIS, Gramado, Brazil  
**SeCoGIS'10:** 4th SeCoGIS, Vancouver, Canada  
**SIGIR:** Annual International ACM SIGIR Conference on Research and Development in Information Retrieval  
**SIGIR'95:** 18th SIGIR, Seattle, Washington, USA  
**SIGIR'98:** 21th SIGIR, Melbourne, Australia  
**SIGIR'00:** 23rd SIGIR, Athens, Greece  
**SIGIR'05:** 28th SIGIR, Salvador, Brazil  
**SIGIR'07:** 30th SIGIR, Amsterdam, The Netherlands  
**SIGIR'08:** 31st SIGIR, Singapore  
**SIGIR'13:** 36th SIGIR, Dublin, Ireland  
**SISAP:** International Workshop on Similarity Search and Applications  
**SISAP'09:** 2nd SISAP, Prague, Czech Republic  
**SISAP'11:** 4th SISAP, Lipari, Italy  
**SISAP'14:** 7th SISAP, Los Cabos, Mexico  
**SISAP'15:** 8th SISAP, Glasgow, Scotland  
**SNA-KDD:** ACM Workshop on Social Network Mining and Analysis  
**SNA-KDD'11:** 5th SNA-KDD, San Diego, USA  
**SODA:** Annual ACM-SIAM Symposium on Discrete Algorithms  
**SODA'10:** 21st SODA, Austin, USA  
**SODA'12:** 23rd SODA, Kyoto, Japan  
**SODA'13:** 24th SODA, New Orleans, USA  
**SODA'17:** 28th SODA, Barcelona, Spain  
**SODA'18:** 29th SODA, New Orleans, USA  
**SOFSEM:** International Conference on Current Trends in Theory and Practice of Computer Science  
**SOFSEM'10:** 36th SOFSEM, Spindleruv Mlyn, Czech Republ  
**SPIRE:** International Symposium on String Processing and Information Retrieval  
**SPIRE'98:** 5th SPIRE, Santa Cruz de la Sierra, Bolivia  
**SPIRE'99:** 6th SPIRE, Cancun, Mexico  
**SPIRE'00:** 7th SPIRE, A Coruña, Spain  
**SPIRE'01:** 8th SPIRE, Laguna de San Rafael, Chile  
**SPIRE'02:** 9th SPIRE, Lisboa, Portugal  
**SPIRE'03:** 10th SPIRE, Manaus, Brazil  
**SPIRE'04:** 11th SPIRE, Padova, Italy  
**SPIRE'05:** 12th SPIRE, Buenos Aires, Argentina  
**SPIRE'06:** 13th SPIRE, Glasgow, Scotland, UK  
**SPIRE'07:** 14th SPIRE, Santiago, Chile  
**SPIRE'08:** 15th SPIRE, Melbourne, Australia  
**SPIRE'09:** 16th SPIRE, Saariselkä, Finland  
**SPIRE'10:** 17th SPIRE, Los Cabos, Mexico  
**SPIRE'11:** 18th SPIRE, Pisa, Italy  
**SPIRE'12:** 19th SPIRE, Cartagena, Colombia  
**SPIRE'13:** 20th SPIRE, Jerusalem, Israel  
**SPIRE'14:** 21st SPIRE, Ouro Preto, Brazil  
**SPIRE'15:** 22nd SPIRE, London, UK  
**SPIRE'16:** 23rd SPIRE, Beppu, Japan  
**SPIRE'17:** 24th SPIRE, Palermo, Italy

**STACS:** International Symposium on Theoretical Aspects of Computer Science  
**STACS'03:** 20th STACS, Berlin, Germany  
**STACS'09:** 26th STACS, Freiburg, Germany  
**SWAT:** Scandinavian Symposium on Algorithmic Theory  
**SWAT'12:** 13th SWAT, Helsinki, Finland  
**SWAT'14:** 15th SWAT, Copenhagen, Denmark  
**VECPAR:** International Meeting on Vector and Parallel Processing  
**VECPAR'98:** 3rd VECPAR, Porto, Portugal  
**WADS:** International Workshop on Algorithms and Data Structures  
**WADS'97:** 5th WADS, Halifax, Nova Scotia, Canada  
**WADS'13:** 12th WADS, London, Ontario, Canada  
**WADS'17:** 16th WADS, St. John's, Newfoundland, Canada  
**WAE:** Workshop on Algorithm Engineering  
**WAE'99:** 3rd WAE, London, UK  
**WAE'01:** 5th WAE, Aarhus, Denmark  
**WEA:** Workshop on Efficient and Experimental Algorithms  
**WEA'04:** 3rd WEA, Angra dos Reis, Brazil  
**WEA'05:** 4th WEA, Santorini, Greece  
**WEA'06:** 5th WEA, Menorca, Spain  
**WSP:** South American Workshop on String Processing  
**WSP'95:** 2nd WSP, Valparaíso, Chile  
**WSP'96:** 3rd WSP, Recife, Brazil  
**WSP'97:** 4th WSP, Valparaíso, Chile  
**WWW:** International World Wide Web Conference  
**WWW'07:** 16th WWW, Banff, Alberta, Canada