Curriculum Vitae

Personal Information

Name: Gonzalo Navarro
Nationality: Argentina (1969)
Degree: PhD. in Computer Science
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Position: Full Professor, Department of Computer Science, University of Chile
Areas of interest: Design and Analysis of Algorithms, Text Databases, Graph Databases, Compression.

Studies

Formal studies. PhD. in Computer Science, University of Chile, Chile (1998). MSc. in Computer Science, University of Chile, Chile (1995). Licenciate in Informatics (5 years plus thesis), Universidad Nacional de La Plata, Argentina (1993) and Latin American School of Informatics (ESLAI), Argentina (1992).

Distinctions. First prize in the III CLEI-UNESCO Contest of Latin American Computer Science MSc. Theses (1996).

Postdoctoral Stays. University of Helsinki, Finland and Université de Marne-la-Vallée, France (1999-2000).

Research

Projects

- (2018-2023) Associate researcher, Millennium Institute *Foundational Research on Data (IMFD)*, Mideplan, Chile.
- (2014-2024) Key researcher, *Basal Center for Biotecnology and Bioengineering (CeBiB)*, Concicyt, Chile.
- (2013-2017) Associate researcher, Millenium Nucleus *Information and Coordination in Networks*, Mideplan, Chile.
- (2008-2012) Key researcher, Millenium Institute *Cellular Dynamics and Biotechnology*, Mideplan, Chile.
- (2002-2008) Researcher (alternate director since 2004 and director since 2006), Millennium Nucleus *Center for Web Research*, Mideplan, Chile.
- (2001-2005) Coordinator, Ibero American project CYTED VII.19 RIBIDI *Information Retrieval and Digital Libraries*.
- (2000-) Main researcher of a Fondecyt Project every 3 years, without interruption.

Distinctions

- (2022) Presentation text in *Technical Perspective* of the *Communications of the ACM* 65(6):90, "The Compression Power of the BWT".
- (2021) Best Student Paper Award, *28th International Symposium on String Processing and Information Retrieval (SPIRE)*.
- (2018) ACM Distinguished Member, distinction given to at most 10% of the ACM members for achieving a significant impact on the computing field.
- (2017) Alberto Apostolico Best Paper Award, *28th Annual Symposium on Combinatorial Pattern Matching (CPM)*.
- (2016) An article included in the Virtual Special Issue "40th Anniversary of Theoretical Computer Science – Top Cited Articles: 1975-2014".

- (2016) Elsevier's *Highest Cited Paper Award*, for two articles in *Theoretical Computer Science*, one in *Information Processing and Management*, and one in *Journal of Discrete Algorithms*, among the 5 most cited 2013 papers in their respective journals.
- (2012-2021) Best Student Paper Awards, *International Symposium on String Processing and Information Retrieval (SPIRE)* 2012 and 2021, *Data Compression Conference (DCC)* 2013, 2016, 2018, and 2019.
- (2008) Scopus Chile Award in Computer Science, Mathematics and Engineering, awarded by Elsevier to researchers with high productivity, with the support of Conicyt.

Invited Talks and Tutorials

- (2023) Joint keynote talk at *26th International Conference on Database Theory (ICDT)* and *26th International Conference on Extending Database Technology (EDBT)*, Ioannina, Greece.
- (2022) Invited talk in the *Workshop on the 20 years after the FM-index*, part of the *Lipari School Computational on Complex and Social Systems*, Lipari, Italy.
- (2022) Keynote talk at the *33rd International Conference on Probabilistic, Combinatorial and Asymptotic Methods for the Analysis of Algorithms (AofA)*, Philadephia, PA.
- (2022) Keynote talk at the *32nd Data Compression Conference (DCC)*, Snowbird, AZ.
- (2022) Invited talk at the *Workshop on Compression + Computation*, online.
- (2019) Keynote talk, *26th International Symposium on String Processing and Information Retrieval (SPIRE)*, Segovia, Spain.
- (2016) Tutorial "Compact Data Structures", *12th Latin American Theoretical Informatics Symposium (LATIN)*, Ensenada, Mexico.
- (2015) Keynote talk, *XLI Latin American Conference on Informatics (CLEI)*, Arequipa, Peru.
- (2014) Keynote talk, *21st International Symposium on String Processing and Information Retrieval (SPIRE)*, Ouro Preto, Brazil.
- (2014) Keynote talk, *11th Latin American Theoretical Informatics Symposium (LATIN)*, Montevideo, Uruguay.
- (2012) Shared tutorial "Space-Efficient Data Structures II", *19th International Conference on String Processing and Information Retrieval (SPIRE)*, Cartagena, Colombia.
- (2012) Keynote talk, *23rd International Workshop on Combinatorial Algorithms (IWOCA)*, Tamil Nadu, India.
- (2012) Joint keynote talk, *23rd Annual Symposium on Combinatorial Pattern Matching (CPM)* and *13th Scandinavian Symposium and Workshops on Algorithm Theory (SWAT)*, Helsinki, Finland.
- (2011) Shared tutorial "Space-Efficient Data Structures", *18th International Conference on String Processing and Information Retrieval (SPIRE)*, Pisa, Italy.
- (2010) Keynote talk, *17th International Symposium on String Processing and Information Retrieval (SPIRE)*, Los Cabos, Mexico.
- (2010) Tutorial "Self-Indexing XML" invited at the *IV Alberto Mendelzon Workshop on Foundations of Data Management (AMW)*, Buenos Aires, Argentina.
- (2009) Keynote talk, *Prague Stringology Conference (PSC)*, Prague, Czech Republic.
- (2009) Keynote talk, *2nd International Workshop on Similarity Search and Applications (SISAP)*, Prague, Czech Republic.
- (2009) Keynote talk, *14th International Conference on Implementation and Application of Automata (CIAA)*, Sydney, Australia.
- (2005) Keynote talk, *12th International Symposium on String Processing and Information Retrieval (SPIRE 2005)*, Buenos Aires, Argentina.

Editorial Boards and Steering Committees

- (2022-2024) Member at large of the Steering Committee of the *International Symposium on Experimental Algorithms (SEA)*.
- (2022-2024) Member of the Steering Committee of the *European Symposium on Algorithms (ESA)*.
- (2016-) Editor in Chief of *ACM Journal of Experimental Algorithmics*.
- (2012-2018) 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 *Latin American Theoretical Informatics*.
- (2008-2014) Co-founder and member of the Steering Committee of the *International Conference on Similarity Search and Applications*.
- (2004-2019) Member of the Editorial Board of *Information Retrieval*.
- (2002,2006-2008,2019-2021) Member of the Steering Committee of *International Symposium on String Processing and Information Retrieval*.

Program Committee Chair and Guest Editor

- (2023) PC Chair of the *25th Workshop on Algorithm Engineering and Experiments (ALENEX)*, Florence, Italy.
- (2022) PC Chair of the *22nd Annual European Symposium on Algorithms (ESA B)*, Postdam, Germany.
- (2020) Guest editor (with Travis Gagie) of a Special Issue in *Information and Computation* dedicated to "Computation over Compressed Data".
- (2018) PC co-chair, *25th International Symposium on String Processing and Information Retrieval (SPIRE)*, Lima, Peru.
- (2018) PC co-chair, *29th Annual Symposium on Combinatorial Pattern Matching (CPM)*, Qingdao, China.
- (2018) Special session co-chair, *28th Data Compression Conference (DCC)*.
- (2018) Guest co-editor, *Algorithmica* special issue on recent *DCC* and *SPIRE* papers.
- (2018) Guest co-editor, *Algorithmica* special issue on *LATIN 2016*.
- (2016) Special session co-chair, *26th Data Compression Conference (DCC)*.
- (2016) PC co-chair, *12th Latin American Theoretical Informatics Symposium (LATIN)*, Ensenada, Mexico.
- (2015) Area Editor, *Encyclopedia of Algorithms*, 2nd edition.
- (2014) Guest co-editor, *Information Systems* special issue on *SISAP 2012*.
- (2014) Special session co-chair, *24th Data Compression Conference (DCC)*.
- (2012) PC co-chair, *5th International Workshop on Similarity Search and Applications (SISAP)*, Toronto, Canada.
- (2010) Guest co-editor, *ACM SIGSPATIAL* special issue on metric space searching.
- (2008) Guest co-editor, *Journal of Discrete Algorithms* special issue on *SISAP 2008* papers.
- (2008) PC co-chair, *1st International Workshop on Similarity Search and Applications (SISAP)*, Cancun, Mexico.
- (2006) Area Editor, *Encyclopedia of Algorithms*.
- (2006) PC co-chair, *4th IFIP International Conference on Theoretical Computer Science (IFIP TCS)*, track of the *19th World Computer Congress (WCC 2006)*, Santiago, Chile.
- (2005) Posters PC co-chair, *28th Annual International ACM SIGIR Conference on Research and Development in Information Retrieval*, Salvador, Brazil.

- (2005) PC co-chair, *12th International Symposium on String Processing and Information Retrieval (SPIRE)*, Buenos Aires, Argentina.
- (2004) PC chair, *XXIV International Conference of the Chilean Computer Science Society (SCCC)*, Arica, Chile.
- (2001) PC chair, *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.
- (2005) Creation of the *Workshop on Compression, Text, and Algorithms*, since then satellite of SPIRE, and organization of several editions.

Refereeing and Program Committees. Participation in around 4 Program Committees per year, including *SPIRE CPM, SIGIR, LATIN, CIKM, ALENEX, WWW, ICDE, DCC, ICALP, KDD, ESA, STACS, WADS*, and *SWAT*, among others. Reviewer for around 15–20 journals per year, including *JCB, IPL, J. Alg., TODS, TOIS, CSUR, DAM, TCS, PRL, Bioinf., ToMM, TKDE, Inf. Sci., Inf. Ret., TIT, PR, TPAMI, JEA, Algorithmica, TALG, Inf. Sys., VLDBJ, I&C, JCSSE, SICOMP, TCBB, JACM*, and *CACM*, among others.

Publications

A complete list of publications can be found at `www.dcc.uchile.cl/gnavarro/publ.html`. The following statistics, valid as of August 2022, give an idea of their impact.

- Two books with Cambridge University Press: *Compact Data Structures* (2016, 570pp) and *Flexible Pattern Matching in Strings* (2002, 280pp, with Mathieu Raffinot).
- 11 conference proceedings, 26 book chapters, 7 special issues in journals, 194 journal papers (including 15 in *Algorithmica*, 8 in *ACM TALG*, 7 in *ACM TOIS*, 7 in *ACM CSUR*, 3 in *IEEE TIT*, 2 in *SICOMP*, 3 in *CGTA*, and 1 in *JACM, ACM TODS, PVLDB, PLOS One, Bioinformatics, DKE, IEEE TPAMI, J. Comp. Biol., VLDBJ*, and *J. Alg.*), 274 conference papers (including 5 in *SODA*, 5 in *SIGIR*, 2 in *STACS*, 2 in *ICDE*, 1 in *ICDT*, 1 in *SIGMOD*).

- Over 4,400 citations to my *WoS (Web of Science Core Collection)* papers from WoS (without self-citations), and over 27,000 in *GS (Google Scholar*. My two most cited articles have 1,160 and 625 citations in WoS (3,453 and 1,757 in GS). My WoS papers have on average 30.9 WoS citations.
- My h-number (maximum value such that a researcher has h papers cited at least h times) is 38 within WoS and 76 in GS. This puts me in position 574 worldwide in Computer Science, according to Guide2Research (`www.guide2research.com/scientists`), and first in Chile (`https://research.com/scientists-rankings/computer-science/cl`).
- I am among the 300 most prolific authors in DBLP (`dblp.org/statistics/prolific6.html`).

Teaching

Advisor. Since 1997, advisor of 8 postdocs, 22 PhDs, 17 MScs, and 29 Engineers. Currently advising 1 Postdocs, 5 PhD, 5 MSc students, and 2 undergrads. Most in Universidad de Chile, but also in Spain, Brazil, Argentina, Cuba, Chile, and Mexico.

Distinctions

- Advisor (and coauthor) of four students that obtaind the best student paper award in conferences: SPIRE 2012, DCC 2013, DCC 2016, DCC 2018, DCC 2019, and SPIRE 2021.

- Google Research Awards to fund two MSc and one PhD theses in 2016-2022.
- Best teaching award at my Department, 2008.
- Advisor of 5 MSc. theses awarded in the CLEI-UNESCO Contest of Latin American Computer Science MSc. Theses. Advisor of the PhD thesis with the first prize in the Doctoral Consortium of the Mexican Computing Meeting (ENC) 2006, and the one with the 1st Prize to the Best Doctoral Thesis in the field of Information Retrieval, awarded by the Spanish Society of Information Retrieval, SERI.

Teaching Material. Textbook (150 pages) for the course Design and Analysis of Algorithms (2018). Textbook (175 pages) for the course Theory of Computing (2006).