

# Sebastián A. Ríos, Ph. D.

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## Education

- |                    |   |
|--------------------|---|
| <b>2004 – 2007</b> | Ph.D. Information Engineering, University of Tokyo, Japan   |
| <b>1996 – 2003</b> | Industrial Civil Engineering, with maximum distinction, University of Chile                               |
| <b>1996 – 2003</b> | Bachelor on Engineering Sciences, Minor on Computer Sciences, with distinction, University of Chile       |
| <b>1996 – 2001</b> | Bachelor on Engineering Sciences, Minor on Industrial Engineering, with distinction, University of Chile. |

## Research Interests

My research interests are from Data Mining area focused on three major domains:

- Text Mining & Higher Order Semantics
- Social Network Analysis and Mining
- Data Mining for Healthcare Systems

## Academic Appointments

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|--------------------------|---|
| <b>10/2017 - Present</b> | <b>External Research Fellow</b> , Computational Intelligence Research Group, University of Basque Country (UPV/EUH), Spain. |
| <b>5/2020 – Present</b>  | <b>Associate Professor</b> , Industrial Engineering Department, University of Chile.  |
| <b>07/2008 – 4/2020</b>  | <b>Assistant Professor</b> , Industrial Engineering Department, University of Chile.  |
| <b>10/2007 – 3/2008</b>  | <b>Researcher</b> , School of Systems Design, Tokyo Denki University, Japan.  |
| <b>4/2007 – 03/2008</b>  | <b>Cooperative Researcher</b> , Center for Collaborative Research (CRC), University of Tokyo, Japan.                        |

## Service to the University

- 03/2012 – Present** **Founder & Director**, Business Intelligence Research Center, Industrial Engineering Department, Faculty of Physical and Mathematical Sciences, University of Chile.
- 07/2020 – Present** **Hiring Committee**, Industrial Engineering Department, Faculty of Physical and Mathematical Sciences, University of Chile.
- 08/2014 – 01/2020** **Director**, Master in Business Engineering, Industrial Engineering Department, Faculty of Physical and Mathematical Sciences, University of Chile. ([www.mbe.cl](http://www.mbe.cl))
- 04/2008 – 09/2019** **Researcher** at Millennium Institute in Complex Engineering Systems, Faculty of Physical and Mathematical Sciences, University of Chile
- 2004 – 2011** **Co-founder & Chief research** at the Web Intelligence Research Centre, Industrial Engineering Department, Faculty of Physical and Mathematical Sciences, University of Chile.
- 2000 – 2004** **Co-Founder & Project Manager**, Information Technologies & Development Area (ADI) in charge of 30 professionals and Students at Faculty of Physical and Mathematical Sciences, University of Chile.

## Professional Experience

- 03/2020 – 06/2020** **Director Redesign Project, Agrosuper S.A.**
- 05/2003 – 11/2003** **Team Leader, Business Process Engineer**, National System of Financial Communications, SINACOFI.
- 2003 – 2004** **Co-founder (owner) & Projects Chief**, Evaluador Ltda. (start-up)

## Honors & Awards

- 11/2017** **Award to Excellence and Pertinence of Research**, University of Chile.
- 06/2017** **Best Paper Award**, International Work-Conference on the Interplay Between Natural and Artificial Computation (IWINAC 2017), La Coruña, Spain, June 2017.
- 09/2014** **Finalist to Best Paper Award**, 18th Annual Conference Knowledge-Based and Intelligent Information & Engineering Systems Society (KES 2014), Gdynia, Poland, Sept. 2014.
- 2011** **World Champions**, Copy detection competition, PAN 2011 - Uncovering Plagiarism, Authorship, and Social Software Misuse. Yahoo! Research Labs.
- 2011** **DOCODE Project Distinguished as TOP 10 Scientific Projects in Chile**, National Commission of Science and Technology (CONICYT), Chilean Government.
- 2010** **5<sup>th</sup> Place, Worldwide Copy Detection Competition**, PAN 2010 - Uncovering Plagiarism, Authorship, and Social Software Misuse. Yahoo! Research Labs.
- 2009** **Best Invited Session Award**, 13th International Conference on Knowledge-Based and Intelligent Information & Engineering (KES 2009)

2004 - 2007

**Mombukagakusho Scholarship, Doctoral Studies Scholarship, Ministry of Education, Japan.**

## Academic Activities

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|---------------------------------|---|
| <b>Editorial Board:</b>         | <ul style="list-style-type: none"><li>• <b>Invited Editor</b>, International Journal on Engineering Applications of Artificial Intelligence, 2009</li><li>• <b>Invited Editor</b>, Sensors, Special Issue</li></ul>   |
| <b>Program Committee Chair</b>  | <ul style="list-style-type: none"><li>• 13th International Conference on Knowledge-Based and Intelligent Information &amp; Engineering Systems" (KES 2009) 28, 29 and 30 Sept. 2009 Santiago, Chile</li></ul>   |
| <b>Organizing Committee</b>     | <ul style="list-style-type: none"><li>• 1<sup>st</sup> Business Intelligence Workshop, Santiago, Chile, 2014</li><li>• 2<sup>nd</sup> Business Intelligence Workshop, Santiago, Chile, 2015</li></ul>   |
| <b>Program Committee Member</b> | <ul style="list-style-type: none"><li>• S4SC 2015 (The 6th Semantic Smart City Workshop: Beyond Linked Data to Models, Standards, Reasoning, and Interoperability).</li><li>• ACIIDS 2015 (7th Asian Conference on Intelligent Information and Database Systems), Bali, Indonesia.</li><li>• CITII 2014 (IX Congreso Internacional de Tecnologías Inteligentes y de la Información, 2014.) Apizaco, Tlaxcala, México.</li><li>• SSC14 (5th Workshop on Semantics for Smart Cities), Riva de Garda, Italy. 2014.</li><li>• ICWSM-13 (ICWSM-13: The 7th International Conference on Weblogs and Social Media), Boston, USA.</li><li>• WI&amp;C 2013 (5th International Workshop on Web Intelligence and Communities), Rio de Janeiro, Brazil. (at WWW 2013)</li><li>• SemCity-13 (The Semantic Smart City Workshop (SemCity))</li><li>• CITII 2012 (VIII Congreso Internacional de Tecnologías Inteligentes y de la Información, 2012)</li><li>• WI&amp;C 2012 (4th International Workshop on Web Intelligence and Communities), Lyon, France. (at WWW 2012)</li><li>• CLAIO 2008 (XIV Congreso Latino Ibero Americano de Investigación de Operaciones), Cartagena de Indias, Colombia.</li></ul> |
| <b>Journal Referee</b>          | <ul style="list-style-type: none"><li>• "The International Journal on Information Sciences", Elsevier, [Journal ISI].</li><li>• "The International Journal on Engineering Applications of Artificial Intelligence", Elsevier, [Journal ISI].</li><li>• "Expert Systems with Applications", Elsevier, [Journal ISI].</li><li>• "Telematics and Informatics", Elsevier, [Journal ISI].</li><li>• "Artificial Intelligence in Medicine", Elsevier, [Journal ISI].</li><li>• "Environment &amp; Planning B", Sage Publishing [Journal ISI].</li><li>• "Web Intelligence and Agents Systems Journal"</li></ul>   |

## External Service

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|--------------------------|--|
| <b>05/2008 – Present</b> | <b>Engineering Committee Referee</b> at Advanced Human Capital Programme at National Found for the Development of Science and Technology at CONICYT. |
| <b>05/2008 – Present</b> | <b>Referee</b> at several National Grants Programs (FONDEF, FONDECYT, etc), CONICYT  |
| <b>05/2008 – Present</b> | <b>Referee</b> at several programs at Chilean Agency for Corporation of Promotion of the Production (CORFO).   |

**05/2011 – 12/2014**    **Engineering Committee Coordinator** at Advanced Human Capital Programme at Chilean Agency for National Science and Technology, CONICYT.

## Founding (selected projects last 10 years)

- 01/2017 – 01/2019**    **Deputy Director (Co-PI)**, US\$ 226,000 - Development and Evaluation of an Intervention Model based on Information Technologies (IT) to reduce the risk of teenager suicide in schools from Metropolitan and VI regions [ID16i10060] – FONDEF, Chilean Agency for National Science and Technology (CONICYT)
- 12/2017 – 12/2021**    **Senior Resercher & Partner Organization Representative**, €1,300,000 aprox. - “Cyber-Physical Systems for PEdagogical Rehabilitation in Special Education (CybsPEED)” (ID: 777720), Marie Skłodowska-Curie Actions (MSCA), Horizon 2020, European Union.
- 01/2018 – 12/2020**    **Senior Researcher**, €163,000 - Advanced Data Analysis and Interpretation Techniques for Computerized Ethology: Applications in Neuroethology. [ID: TIN2017-85827-P], Ministry of Economics, Industry and Competitiveness (MINECO), Government of Spain, Spain.
- 08/2012 – Present**    **Founder and Director**, US\$ 514,000 - Business Intelligence research Center. Private Companies Founded. 5 years Cooperation Agreement between Movistar S.A. and Industrial Engineering Department
- 3/2014 – 3/2016**    **Director (PI)**, US\$ 180,000 – Development and Evaluation of Data Mining Algorithms to Predict the Respiratory Risk of Pediatric Patients at a Public Hospital [ID: CA13i10300], FONDEF, CONICYT.
- 10/2009 – 09/2012**    **Director (PI)**, US\$ 80,000 - Semantic Web Mining Techniques to Study Enhancements of Virtual Communities. ID: 11090188, FONDECYT, CONICYT.
- 12/2009 – 12/2011**    **Deputy Director (Co-PI)**, US\$357,000 – Development and Implementation of a Computational Tool for Copy Detection in Digital Documents: Document Copy Detector (DOCODE). [ID: D08i1015] – FONDEF, CONICYT.

## Patents and Industrial Property

**05/2011**    **Document Copy Detector (DOCODE)** N°204.433, DIBAM, Chile. (Industrial Property)

## Keynotes

- October 20<sup>th</sup>, 2016**    “A Data Mining Application for Health Care”, Keynote Talk, 11th International Conference on Soft Computing Models in Industrial and Environmental Applications (SOCO 2016), San Sebastián, Spain.
- July 19<sup>th</sup>, 2017**    “Almohadita – Ambar”. Healthcare Symposium, Digital Country Foundation, W Hotel, Santiago, Chile.
- (“Almohadita – Ambar”. Simposio en Salud, Fundación País Digital, Hotel W, Santiago, Chile.)

<https://www.youtube.com/watch?v=TiIMUiiXflw&feature=youtu.be> (min 22:40)

## Teaching Experience

- Undergraduate** - **Business Process Redesign (since 2008 all semesters until present)**
- Master/Doctoral** - **Business Process Redesign with TI & Data Mining (since 2008 one semester a year until present)**
- **Data Mining & Data Science Methods (since 2015 one semester a year until present)**

## Students Advisor (Completed)

- Undergraduate**
  - **Advisor of 44 Industrial Engineering degree theses**
  - **Advisor of 8 Computer Science degree theses**
  - **Co-advisor of 16 Industrial Engineering degree theses**
  - **Co-advisor of 4 Electrical Engineering degree theses**
  - **Co-advisor of 1 Computer Science degree Theses**
- Master**
  - **Advisor on 28 theses, 5 as co-advisor in master degree and Invited to 33 masters' degree evaluation committee at the University of Chile**
  - **Invited to 4 master theses on other national Universities**
- Doctor**
  - **Co-advisor of 1 doctor from University of Basque Country, Spain. (graduated)**
  - **Currently advisor of 6 doctor degree students from University of Chile**
  - **Participation in 1 doctor degree evaluation committee at University of Chile**
  - **Participation in 1 doctor degree evaluation committee at University of Basque Country, Spain**

## Ph.D Students Advisor (work in progress)

- Juan Pablo Hormazaval (Doctoral Program on Engineering Systems - DSI)
- Patricio Wolff (DSI)
- Constanza Contreras (DSI)
- Ricardo Muñoz (DSI)
- Pablo Cleveland (DSI)
- Vezna Sabando (Doctoral Program on Public Health, Medicine Faculty)

## Publications

### Books and Chapters

1. Tope Omitola, **Sebastián A. Ríos**, John G. Breslin: Social Semantic Web Intelligence, Morgan & Claypool Publishers, 2015. (SCOPUS)
2. Juan D. Velásquez, **Sebastián A. Ríos**, Robert J. Howlett, Lakhmi C. Jain: Knowledge- Based and Intelligent Information and Engineering Systems, 13th International Conference on Knowledge-Based

and Intelligent Information and Engineering Systems (KES 2009), Proceedings, Part I; Springer Verlag, 2009. (SCOPUS) [TOP 50% eBooks more downloaded from Springer in 2017 with 4333 downloads and 26188 since 2010]

3. Juan D. Velásquez, **Sebastián A. Ríos**, Robert J. Howlett, Lakhmi C. Jain: Knowledge- Based and Intelligent Information and Engineering Systems, 13th International Conference on Knowledge-Based and Intelligent Information and Engineering Systems (KES 2009), Proceedings, Part II; Springer Verlag, 2009. (SCOPUS) [TOP 25% eBooks more downloaded from Springer in 2017 with 9726 downloads and 26.165 since 2010]
4. **Sebastián A. Ríos** & Felipe Aguilera, “Web Intelligence on the Social Web”, Chapter on Advanced Techniques in Web Intelligence-1 (Studies in Computational Intelligence) [Hard-cover], Springer Verlag, 2010. (SCOPUS)

## ISI Indexed Journals

1. Manuel Graña, M Wozniak, **Sebastian Ríos**, Javier de Lope. Computational Intelligence in Remote Sensing: An Editorial. *Sensors* 20 (3), 633 (IF: 3,031; Q1 in Instrument & Instrumentation).
2. Patricio Wolff, **Sebastián A. Ríos** & Manuel Graña, “Setting up standards: A methodology for pediatric triage machine learning model based on clinical outcomes”, Elsevier, *Expert Systems with Applications*, 138, 2019. (IF: 4,292; Q1 in Computer Science & Artificial Intelligence).
3. Asier Garmendia, Manuel Graña, José Manuel López-Guede & **Sebastián A. Ríos**, “Neural and statistical predictors for time to readmission in emergency departments: a case study”, Elsevier, *Neurocomputing*, Vol. 354, pp. 3 – 9, 18 Aug. 2019. (IF: 3,317; Q1 in Computer Science & Artificial Intelligence)
4. Patricio Wolff, Manuel Graña, **Sebastián A. Ríos**, and Maria Begoña Yarza, “Machine Learning Readmission Risk Modeling: A Pediatric Case Study”, *BioMed Research International*, vol. 2019, Article ID 8532892, 9 pages, 2019. (IF: 2,197; Q3 in Medicine. Research & experimental)
5. **Sebastián A. Ríos**, Felipe Aguilera, J. David Núñez-González & Manuel Graña, “Semantically enhanced network analysis for influencer identification in online social networks”, Elsevier, *Neurocomputing*, Vol. 326, pp. 71 – 81. 31 Jan. 2019 (IF: 3,317; Q1 in Computer Science & Artificial Intelligence).
6. Asier Garmendia, **Sebastián A. Ríos**, José Manuel López-Guede & Manuel Graña, “Triage prediction in pediatric patients with respiratory problems”, Elsevier, *Neurocomputing*, Vol. 326, pp. 161 – 167 2019. (IF: 3,317; Q1 in Computer Science & Artificial Intelligence).
7. Enrique Cáceres, Miguel Carrasco & **Sebastián Ríos** “Evaluation of an eye-pointer interaction device for human-computer interaction”, *Heliyon Journal*, Volume 4, Issue 3, 2018. (Without ISI IF yet).
8. Arkaitz Artetxe, Borja Ayerdi, Manuel Graña & **Sebastián Ríos**, “Using Anticipative Hybrid Extreme Rotation Forest to predict emergency service readmission risk”, Elsevier, *Journal of Computational Science*, 20, pp.154-161, 2017. (IF: 1,748; Q2 in Computer Science, Theory & Methods).
9. Asier Garmendia, Manuel Graña, José Manuel López-Guede & **Sebastián Ríos**, “Predicting patient hospitalization after emergency readmission”, Taylor & Francis, *Cybernetics and Systems: An International Journal*, 48 (3), pp. 182-192, 2017. (IF: 1,434; Q3 in Computer Science & Cybernetics).

10. **Sebastián A. Ríos** & Ricardo Muñoz, "Land Use detection with cell phone data using topic models: Case Santiago, Chile", Elsevier, *Computers, Environment and Urban Systems* 61, pp. 39 - 48, 2017. (IF: 2,659; Q1 in Geography & Environmental Studies).
11. Arkaitz Artetxe, Manuel Graña, Andoni Beristain & **Sebastián Ríos**, "Balanced training of a hybrid ensemble method for imbalanced datasets: a case of emergency department readmission prediction", Springer, *Neural Computing and Applications*, pp. 1-10, 2017. (IF: 2,505; Q2 in Computer Science & Artificial Intelligence).
12. Manuel Graña, Darya Chyzhyk, Carlos Toro, **Sebastián Ríos**: Innovations in healthcare and medicine, *Computers in Biology and Medicine*, Elsevier, Vol 72, pp. 226 - 228, 2016. (IF: 1,836; Q2 in Mathematical & Computational Biology).
13. **Sebastián A. Ríos** & Lili Erazo, "An automatic apnea screening algorithm for children", Elsevier, *Expert Systems with Applications*, 48, pp. 42-54, 2016. (IF: 3,928; Q1 in Computer Science, Artificial Intelligence).
14. Naiara Muro, Eider Sanchez, Carlos Toro, Eduardo Carrasco, **Sebastián A Ríos**, Frank Guijarro & Manuel Graña, "Experience-Based Electronic Health Records", Taylor & Francis, *Cybernetics and Systems*, 47 (1-2), pp.126-139, 2016. (IF: 1,434; Q3 in Computer Science & Cybernetics).
15. Contanza Contreras-Piña & **Sebastián A. Ríos**, "An empirical comparison of latent semantic models for applications in industry", Elsevier, *Neurocomputing*, 179, pp. 176-185, 2016. (IF: 3,317; Q1 in Computer Science & Artificial Intelligence).
16. **Sebastián A. Ríos** & Ricardo Muñoz, "Content Patterns in Topic-Based Overlapping Communities", The Scientific World Journal, vol. 2014, Article ID 105428, 11 pages, 2014. doi:10.1155/2014/105428 (IF: 1,219; Q2 in Multidisciplinary Sciences).
17. Ivan F. Videla-Cavieres & **Sebastián A. Ríos**, "Extending market basket analysis with graph mining techniques: A real case", Elsevier, *Expert Systems with Applications*, 41(4), pp. 1928-1936, 2014. (IF: 3,317; Q1 in Computer Science & Artificial Intelligence).
18. Rossi Setchi, Juan D. Velásquez, **Sebastián A. Ríos**, Cungen Cao: Special issue on semantic information and engineering systems. *International Journal on Engineering Applications of Artificial Intelligence (EAAI)*, 24(8): 1303-1304, Elsevier, 2011. (IF: 2,894; Q1 in Computer Science and Artificial Intelligence).
19. **Sebastián A. Ríos** & Juan D. Velásquez, "Finding Representative Web Pages Based on a SOM and a Reverse Cluster Analysis", *International Journal on Artificial Intelligence Tools (IJAIT)*, 20(1): 93-118, 2011. (IF: 0,778; Q4 in Computer Science and Artificial Intelligence).
20. **Sebastián A. Ríos**, Juan D. Velásquez, Hiroshi Yasuda & Terumasa Aoki, "Conceptual Classification to Improve a Web Site Content". *Lecture Notes In Computer Science*, Springer-Verlag, 4224, 869-877, 2006. (JCR 2005, IF: 0,402; Q4 in Computer Science, Theory and Methods).
21. **Sebastián A. Ríos**, Juan D. Velásquez, Hiroshi Yasuda & Terumasa Aoki, "Web Site Off-Line Structure Reconfiguration: A Web User Browsing Analysis", *Knowledge-based Intelligent Information and Engineering Systems, Lecture Notes in Artificial Intelligence (LNAI)*, Springer-Verlag, 4252(2) pp. 371-378. (JCR 2005 IF: 0,302; Q4 in Computer Science and Artificial Intelligence)
22. **Sebastián A. Ríos**, Juan D. Velásquez, Hiroshi Yasuda & Terumasa Aoki, "Web Site Improvements Based on Representative Pages Identification", *Lecture Notes in Computer Science*, Springer-Verlag, 3809, 1162-1166, 2005. (JCR 2005, IF: 0,402; Q4 in Computer Science, Artificial Intelligence).

23. **Sebastián A. Ríos**, Juan D. Velásquez, Eduardo S. Vera, Hiroshi Yasuda & Terumasa Aoki, "Using SOFM to Improve Web Site Text Content", *Lecture Notes in Computer Science, Springer-Verlag GmbH*, 3611, 622-626, 2005. (JCR 2005, IF: 0,402; Q4 in Computer Science, Theory and Methods).

#### Submitted ISI papers:

1. Patricio Wolff & **Sebastián A. Ríos** "A machine learning model for pediatric early warning systems based on clinical outcomes" Submitted to International Journal of Artificial Intelligence in Medicine (Q1 in Medical Informatics). 1<sup>st</sup> round submitted June 11th 2019.
2. Pablo Cleveland, **Sebastián A. Ríos** & Felipe Aguilera "A Microscopic Information Spreading Model for Web Forums", Submitted to Information Sciences (IF: 5,524; Q1 in Computer Science & Information Systems), 1<sup>st</sup> round submitted on May 2019.
3. Pablo Cleveland, **Sebastián A. Ríos** & Felipe Aguilera "A Microscopic Information Spreading Model for Web Forums", Submitted to Information Sciences (IF: 5,524; Q1 in Computer Science & Information Systems), 3rd round re-submitted on Jan. 2020.

#### Other Journals

1. **Sebastián A. Ríos**, Felipe Aguilera, Francisco Bustos, Tope Omitola & Nigel Shadbolt, "Leveraging social network analysis with topic models and the Semantic Web (extended)", *Web Intelligence and Agent Systems: An International Journal* 11(4): 303-314, 2013. (SCOPUS)
2. **Sebastián A. Ríos** & Roberto A. Silva, "A new dissimilarity measure for online social networks moderation", *Web Intelligence and Agent Systems: An International Journal* 11(4): 351-364, 2013. (SCOPUS)
3. Gaston L'Huillier, Hector Alvarez, **Sebastián A. Ríos** and Felipe Aguilera, "Topic-based social network analysis for virtual communities of interests in the dark web". *SIGKDD Explorations* 12(2): 66-73, 2010.
4. **Sebastián A. Ríos**, Juan D. Velásquez, Hiroshi Yasuda and Terumasa Aoki, "A Hybrid System for Concept-based Web Usage Mining", IOS Press, *International Journal of Hybrid Intelligent Systems (IJHIS)*, 3(4):219-235, 2006.
5. **Sebastián A. Ríos**, Juan D. Velásquez, Hiroshi Yasuda and Terumasa Aoki, "Using a Self Organizing Feature Map for Extracting Representative Web Pages from a Web Site". *International Journal of Computational Intelligence Research (IJCIR)*, 2, 159-167, 2006.
6. Juan D. Velásquez, **Sebastián A. Ríos**, Alejandro Bassi, Hiroshi Yasuda and Terumasa Aoki, "Towards the identification of keywords in the web site text content: A methodological approach", *International Journal on Web Information Systems*, 1(1): 53 – 57 , 2005. (SCOPUS)

#### Refereed Conference and Workshops Papers

1. José Manuel Lopez-Guede, Asier Garmendia, Manuel Graña, **Sebastian Rios**, Julian Estevez, "Towards hospitalization after readmission risk prediction using ELMs", International Work-Conference on the Interplay Between Natural and Artificial Computation (IWINAC 2017), *Lecture Notes in Computer*



*Science* (including subseries *Lecture Notes in Artificial Intelligence* and *Lecture Notes in Bioinformatics*), 10338 LNCS, pp. 384-393, La Coruña, España, June 2017. (SCOPUS)

2. Arkaitz Artetxe, Manuel Graña, Andoni Beristain & **Sebastián Ríos** “Emergency Department Readmission Risk Prediction: A Case Study in Chile”, *International Work-Conference on the Interplay Between Natural and Artificial Computation (IWINAC 2017)*, *Lecture Notes in Computer Science* (including subseries *Lecture Notes in Artificial Intelligence* and *Lecture Notes in Bioinformatics*), 10338 LNCS, pp. 11 – 20. La Coruña, España, June 2017. (SCOPUS)
3. **Sebastián A Ríos**, Fabián García Tenorio & Angel Jimenez-Molina, “A Benchmark on Artificial Intelligence Techniques for Automatic Chronic Respiratory Diseases Risk Classification”, Springer International Publishing, *Innovation in Medicine and Healthcare 2015 (InMed 2015)*. pp. 471 – 481. Kyoto, Japan, September 2015. (SCOPUS)
4. Claudio Estevez, Diego Vallejos, **Sebastián A Ríos**, Pablo Brockmann, “Toward Non-invasive Polysomnograms Through the Study of Electroencephalographic Signal Correlation for Remotely Monitored Cloud-Based Systems”, Springer International Publishing, *Innovation in Medicine and Healthcare 2015 (InMed 2015)*, pp. 483 – 492. Kyoto, Japan, September 2015. (SCOPUS).
5. José Tomás Arenas-Cavalli, **Sebastián A. Ríos**, Mariano Pola & Rodrigo Donoso, “A Web-Based Platform for Automated Diabetic Retinopathy Screening”, 19th Annual Conference on Knowledge-Based and Intelligent Information & Engineering Systems (KES 2015), Elsevier, *Procedia Computer Science*, Vol. 60. pp 557 – 563. Singapore, September 2015. (SCOPUS)
6. Matías Echeverría, Angel Jimenez-Molina & **Sebastián A. Ríos**, “A semantic framework for continuous u-health services provisioning”, 19th Annual Conference on Knowledge-Based and Intelligent Information & Engineering Systems (KES 2015), Elsevier, *Procedia Computer Science*, Vol. 60. pp 557 – 563. Singapore, September 2015. (SCOPUS)
7. **Sebastián A. Ríos** & Ivan F Videla–Cavieres, “Generating groups of products using graph mining techniques”, 16th International Conference on Knowledge-Based and Intelligent Information and Engineering Systems (KES 2014), Elsevier, *Procedia Computer Science*, Vol. 35. pp 730 – 738. Gdynia, Poland, September 2014. (SCOPUS)
8. Lili Erazo & **Sebastián A. Ríos**, “A benchmark on automatic obstructive sleep apnea screening algorithms in children”, 16th International Conference on Knowledge-Based and Intelligent Information and Engineering Systems (KES 2014), Elsevier, *Procedia Computer Science*, Vol. 35. pp 730 – 738. Gdynia, Poland, September 2014. (SCOPUS)
9. **Sebastián A. Ríos** and Ricardo Muñoz, “Dark Web Portal Overlapping Community Detection Based on Topic Models.” ACM, SIGKDD Workshop on Intelligence and Security Informatics (ISI-KDD 2012), 2:1–2:7. Beijing, China, August 2012. (SCOPUS)
10. Pablo E Román, Miguel E Gutiérrez, **Sebastián A. Ríos**, “A model for content generation in On-line social network”, 16th International Conference on Knowledge-Based and Intelligent Information and Engineering Systems (KES 2012), IOS Press, *Frontiers in Artificial Intelligence and Applications*, pp. 756 – 765. San Sebastián, Spain, September 2012. (SCOPUS)
11. Ricardo Muñoz & **Sebastián A. Ríos**, “Overlapping Community Detection in VCoP using Topic Models”, 16th International Conference on Knowledge-Based and Intelligent Information and Engineering

Systems (KES 2012), IOS Press, Frontiers in Artificial Intelligence and Applications, pp. 736 – 745. San Sebastián, Spain, September 2012. (SCOPUS)

12. **Sebastián A. Ríos**, Roberto Silva and Felipe Aguilera, “A dissimilarity measure for automate moderation in online social networks”, In Proceedings of the 4th International Workshop on Web Intelligence & Communities (WI & C’12), ACM, Article 3, 9 pages. Lyon, France, April 2012. (SCOPUS)
13. Gabriel Oberreuter, Gaston L’Huillier, **Sebastián A. Ríos** & Juan D. Velásquez, “Approaches for Intrinsic and External Plagiarism Detection” - Notebook for PAN at Conference and Labs of the Evaluation Forum (CLEF 2011), Notebook Papers, 19-22. Amsterdam, The Netherlands, September 2011. (SCOPUS)
14. Lautaro Cuadra, **Sebastián A. Ríos** & Gaston L’Huillier, “Enhancing Community Discovery and Characterization in VCoP using Topic Models”, In: IEEE/WIC/ACM International Conference on Web Intelligence and Intelligent Agent Technology (WI-IAT 2011), pp. 326 – 329. Lyon, France, August 2011. (SCOPUS)
15. **Sebastián A. Ríos**, Felipe Aguilera, Francisco Bustos, Tope Omitola & Nigel Shadbolt, “Leveraging Social Network Analysis with Topic Models and the Semantic Web”, In: IEEE/WIC/ACM International Conference on Web Intelligence and Intelligent Agent Technology (WI-IAT 2011), pp. 339 – 342. Lyon, France, August 2011. (SCOPUS)
16. Felipe Bravo-Marquez, Gaston L’Huillier, Patricio Moya, **Sebastián A. Ríos** & Juan D. Velásquez, “An automatic text comprehension classifier based on mental models and latent semantic features”, in Proceedings of the 11th International Conference on Knowledge Management and Knowledge Technologies (i-KNOW 2011), ACM, Article 23. Graz, Austria, September 2011. (SCOPUS)
17. Felipe Bravo-Marquez, Gaston L’Huillier, **Sebastián A. Ríos** & Juan D. Velásquez, “A Text Similarity Meta-Search Engine Based on Document Fingerprints and Search Results Records”. In: IEEE/WIC/ACM International Conference on Web Intelligence and Intelligent Agent Technology (WI-IAT 2011), pp. 146 – 153, Lyon, France, August 2011. (SCOPUS)
18. Gabriel Oberreuter, Gaston L’Huillier, **Sebastián A. Ríos** & Juan D. Velásquez, “Outlier-Based Approaches for Intrinsic and External Plagiarism Detection”, in proceeding of 15th International Conference on Knowledge-Based and Intelligent Information and Engineering Systems (KES 2011), Lecture Notes in Computer Science (LNCS), (2) 2011: pp. 11 – 20, Kaiserslautern, Germany, September 2011. (SCOPUS)
19. Gabriel Oberreuter, Gaston L’Huillier, **Sebastián A. Ríos** & Juan D. Velásquez, “FastDoccode: Finding Approximated Segments of N-Grams for Document Copy Detection”, Lab Report for PAN at Conference and Labs of the Evaluation Forum (CLEF 2010), CEUR Workshop Proceedings, Vol. 1176. Padua, Italy, September 2010. (SCOPUS)
20. Gaston L’Huillier, Hector Alvarez, **Sebastián A. Ríos** and Felipe Aguilera, “Topic-based social network analysis for virtual communities of interests in the dark web”. *ACM SIGKDD Workshop on Intelligence and Security Informatics 2010*, Washington, DC, USA, July 25<sup>th</sup> 2010. (SCOPUS)
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36. **Sebastián A. Ríos**, Juan D. Velásquez, Hiroshi Yasuda & Terumasa Aoki, “Identifying keywords to improve a web site text content”, 6th International Conference on Information Integration and Web-based Applications & Services (IWAS 2004), Jakarta, Indonesia, September 2004.

### Invited Talks (only international)

1. **Sebastián A. Ríos**, “Inteligencia de Negocios Aplicada al Sector Empresarial Industrial”, Departamento de Ingeniería Industrial, Facultad de Ingeniería, Universidad Mayor de San Andrés, La Paz, Bolivia, Agosto 11, 2017.
2. **Sebastián A. Ríos**, “Land Use Fingerprints and User Behavior Using Cell Phone Data”, URBANICS 3 Workshop, Instituto Sistemas Complejos de Ingeniería (ISCI), Hotel Pucón, Pucón, Chile, March 13th, 2017.
3. **Sebastián A. Ríos**, “Técnicas de Data Mining sobre datos de Telefonía Celular para Ciudades Inteligentes”, Workshop en Ciudades Inteligentes: Modelado y Simulación de Sociedades Sustentables, Universidad de Buenos Aires, Buenos Aires, Argentina, Diciembre 2, 2016.
4. **Sebastián A. Ríos**, “A Data Mining Application for Health Care”, Keynote Talk, 11th International Conference on Soft Computing Models in Industrial and Environmental Applications (SOCO 2016), San Sebastián, España, Octubre 20, 2016.
5. **Sebastián A. Ríos**, “Social Semantic Web intelligence”, Charla Plenaria, Facultad de Informática, Universidad Complutense de Madrid, Madrid, España, Octubre 27, 2016.
6. **Sebastián A. Ríos**, “Smart Cities, Data Mining e Industria 4.0”, Seminario proyecto Industria 4.0, Gipuzkoa, España, Diciembre 2015.

7. **Sebastián A. Ríos**, "Smart Cities & Data Mining", VicomTech, Parque Tecnológico de San Sebastián, San Sebastián, España, Diciembre 2015.
8. **Sebastián A. Ríos**, "Análisis de Redes Sociales", Charlas en Innovación, Banco Bisa S.A., La Paz, Bolivia, 2012.
9. **Sebastián A. Ríos**, "Inteligencia de Negocios: Conceptos y Aplicaciones", Fundación Maya, La Paz, Bolivia, 2011
10. **Sebastián A. Ríos**, "Pitfalls in data mining", ALIO-INFORMS Joint International Meeting, Buenos Aires, Argentina, June 2010.
11. **Sebastián A. Ríos**, Semantic Web Usage Mining. GEMnet/AccessNova Forum: Pucón Symposium 2008, May 19-25.
12. **Sebastián A. Ríos**, Web Site Techniques for Web Mining. GEMnet/AccessNova Forum: Nagasaki Symposium 2006, May 31st - June 2<sup>nd</sup>. Available in CD-Rom

## Software Development

### **ALMOHADITA-AMBAR**

This software was developed with the resources from my research project [FONDEF - CA13I10300] of the same name. The application was introduced by June 2015 at the Exequiel Gonzales Cortés Public Hospital for monitoring 3 beds. Now in 2018 the system is fully operational and monitoring 100% of Hospital dependencies (168 beds). The system is closed to de Health ministry network, and can be seen only from inside the hospital. However, a video of it can be seen here: <http://www.almohadita.cl>, the system is used for free in the hospital, and my aim is to provide the system for free to any public Chilean Hospital that requires it.

### **DOCODE**

I participated from the first version of the software that was created with the project FONDEF - D08i1015. We also created the company DOCODE S.A. The system helps to detect copy in digital documents. The page of the company is: <https://www.docode.cl> Of course, DOCODE it in its 5<sup>th</sup> version, but I'm very proud to be part of the first version.

## Startup Creation Mentoring

I have also mentored many start-up companies from my students. I can mention at least 3 of them:

### **www.adere.so**

This company was created on 2013 by two of my students after working with me in my social network analysis research project. The company offers a postcenter which helps customer support areas working with social media.

### **www.teledx.org**

Tele DX offers online diabetic retinopathy screening. The company was created in 2012 by one of my students using the algorithms developed in his thesis.

### **www.doncupon.cl**

e-commerce site created on 2015 by one of my students and sold on 2017. A key feature of the web site was the algorithm for customer retention developed by my student on his masters' degree.

## Media (selected)

### Radio & TV

1. Chanel 13C, Documentary, April 26<sup>th</sup> 2017  
"Proyecto ALMOHADITA"  
(English: "ALMOHADITA PROJECT")  
<http://www.13.cl/c/programas/ingenio/capitulos/26-abril-2017-almohadita>
2. 24Horas, National Television of Chile. June 3rd 2011  
"Terminó la era del Copy and Paste"  
(English: "The end of the era of Copy and Paste")
3. Radio Program New Mind, Radio Canal13, August 31<sup>st</sup> 2016.  
"Proyecto Fondef Almohadita".  
<https://www.youtube.com/watch?v=of8290VZ9IY>

### Newspaper

1. Financial Newspaper, Health Portfolio, March 26th 2018  
"Almohadita: monitoreo a distancia para niños"  
  
(Almohadita: distance monitoring for kids)
2. Special Editions, el Mercurio, Business Intelligence, March 20th 2018  
"Las organizaciones cometen 5 errores al realizar proyectos de inteligencia de negocios"  
  
(EN: "The organizations fall into 5 mistakes when performing Business Intelligence Projects")
3. Special Editions, El Mercurio. March 28th 2016  
"Investigación en Inteligencia de Negocios para una Ciudad Inteligente"  
  
(EN: "Business Intelligence Research for a Smart City")
4. Special Editions, El Mercurio. March 28th 2016.  
"Los profesionales de datos son cada vez más demandados para facilitar la toma de decisiones"  
  
(EN: "Data Scientist are getting more required to facilitate decision making process")
5. Tendencias, La Tercera, December 25th 2011.  
"Software que evita que niños copien. Proyecto del Grupo de TI de Ingeniería Industrial Destacado entre los 10 Hitos Científicos del 2011 en Chile"  
  
(EN: "Software to stop children from copy their homework. Project from TI group from Industrial Engineering between the top 10 scientific milestones of 2011 in Chile")