PERSONAL INFORMATION

Senén Barro Ameneiro

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Sex Male | Date of birth 21/11/1962 | Nationality Spanish

WORK EXPERIENCE

2019 - Present	**Scientific Director** of the Research Centre in Intelligent Technologies (CiTIUS), University of Santiago de Compostela (USC)
January 1986 - Present	**Professor and Full Professor** (since June 1995) of Artificial Intelligence, University of Santiago de Compostela (USC)
1990- 2019	**Founder and director** of the Intelligent Systems Group of the University of Santiago de Compostela (USC)
October 2010 – June 2017	**President** of RedEmprendia *RedEmprendia was a University Network aimed at supporting knowledge & technology transfer and entrepreneurship involving 28 of the best Latin American, Spanish, and Portuguese universities.*
June 2002 – June 2010	**Rector** of the University of Santiago de Compostela (USC)
May 2008 – June 2010	**Vice-president** of the Conference of Rectors of Spanish Universities (CRUE)
May 2003 – June 2010	Member of the **Steering Committee** of the Conference of Rectors of Spanish Universities (CRUE)
June 2003 – October 2005	**President** of the ICT working group of the Conference of Rectors of Spanish Universities (CRUE)

EDUCATION AND TRAINING

1988	PhD in Computer Science (with honors), University of Santiago de Compostela	EQF level 7
1985	Degree in Physics, University of Santiago de Compostela	EQF level 8

General R&D activity and entrepreneurship indicators

R&D activity and entrepreneurship indicators		
Number of supervised PhD theses	17 (+2 in supervision at present)	
Number of scientific publications	>80 in international journals (2 out of 3 in Q1 in last 10 years)	
h-index	41 (Google Scholar, July 2025), with 10,752 citations	
Resource-raising as an IP (over the past 10 years)	R&D projects:	> 8 million €
	R&D contracts:	> 4.2 million €
Software licensing	6 (4 were transferred for commercial exploitation)	
Spin-offs creation	**Situm Technologies**, created in 2014 (>40 employees and it has raised > 3 million € investment) and **InVerbis Analytics**, created in December 2020 (it has raised > 1,5M € investment)	
Articles published in mass media, social media, scientific and academic outreach (last 10 years)	>450	

SUMMARY

- I obtained my **B.Sc. (1985) and Ph.D. (1988) degrees (with honors)** in Physics and Computer Science, respectively, from the University of Santiago de Compostela (USC). I am a full professor of Artificial Intelligence since 1995; **Director of the Department of Electronics and Computer Science** at the USC **(1993-2002)**. Since July 2019 I am the **scientific director of the Research Centre on Intelligent Technologies (CiTIUS) of the USC** (the only research centre in AI in Galicia region and one of the few Spanish ones).

- **Founder of the Intelligent Systems Group (1990),** which involves more than 50 members at present and is one of the leading Spanish research groups in terms of R&D and technology transfer indicators. This group is focused on multiple AI fields (natural language technologies, explainable AI, data and process analytics, intelligent fuzzy systems, machine learning, federated learning, and neural computing, and intelligence in mobile and autonomous systems). I have directly supervised the research training of **one out of every three PIs at CiTIUS.**

- **Rector of the University of Santiago de Compostela (USC) (2002-2012)**, promoting internationalisation, research, and entrepreneurship, and achieving on of the national eight accreditations as "Campus of International Excellence" from the Spanish Government for the main Campus (Campus Vida) of the USC (2009).

- **I chaired the Conference of Rectors of Spanish Universities (CRUE) ICT Working Group** from June 2003 until October 2005. I joined the Board of the CRUE in May 2005 and was appointed **Vice-President of the CRUE** in 2008, a position I held until the end of my term as Rector of the USC in June 2010.

- From **2010 to 2017** I was president of RedEmprendia, a network involving 28 of the most relevant Latin-American, Spanish and Portuguese universities, focused on knowledge and technology transfer, innovation, and entrepreneurship.

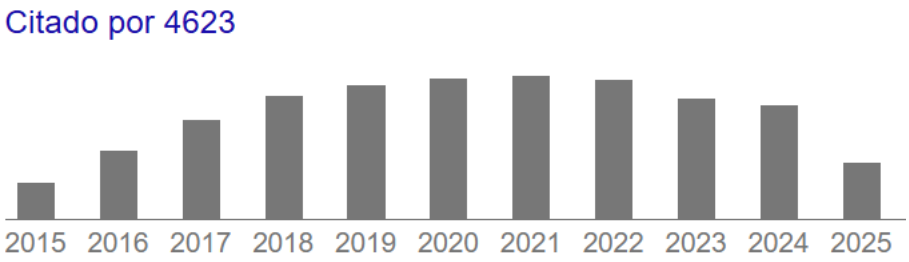
- I am editor or author of **seven books** including: "Fuzzy Logic in Medicine", S. Barro and R. Marín (Eds.), Springer-Verlag, 2002; author/co-author of **more than 300 scientific papers,** and I was **chair of the Organising Committee** of the IEEE International Symposium on Multiple-Valued Logic (ISMVL-1996); the International Conference on European University on Information Systems (EUNIS-2009); the 10th International Conference on Natural Language Generation (INLG2017), and the **24th European Conference on Artificial Intelligence (ECAI2020)** and, again, the **27th European Conference on Artificial Intelligence (ECAI2024).**

RECENT PAPERS IN INTERNATIONAL JOURNALS (selection of 10 recent papers)

1) D. Isla-Cernadas, M. Fernández-Delgado, E. Cernadas, M. S. Sirsat, H. Maarouf and S. Barro, "Closed-Form Gaussian Spread Estimation for Small and Large Support Vector Classification," in *IEEE Transactions on Neural Networks and Learning Systems*, vol. 36,

no. 3, pp. 4336-4344, March 2025, doi: 10.1109/TNNLS.2024.3377370.
2) L. Nannini, J. M. Alonso-Moral, A. Catalá, M. Lama and S. Barro, "Operationalizing Explainable Artificial Intelligence in the European Union Regulatory Ecosystem," in IEEE Intelligent Systems, vol. 39, no. 4, pp. 37-48, July-Aug. 2024, doi: 10.1109/MIS.2024.3383155.
3) Alateyat, H., Fernández-Delgado, M., Cernadas, E. *et al.* Ultra Fast Classification and Regression of High-Dimensional Problems Projected on 2D. *Neural Process Lett* **55**, 5377–5400 (2023). https://doi.org/10.1007/s11063-022-11090-3
4) Casado, F.E., Lema, D., Iglesias, R. *et al.* Ensemble and continual federated learning for classification tasks. *Mach Learn* **112**, 3413–3453 (2023). https://doi.org/10.1007/s10994-023-06330-z
5) Casal-Otero, L., Catala, A., Fernández-Morante, C. *et al.* AI literacy in K-12: a systematic literature review. *IJ STEM Ed* **10**, 29 (2023). https://doi.org/10.1186/s40594-023-00418-7
6) Marcos F. Criado, Fernando E. Casado, Roberto Iglesias, Carlos V. Regueiro, Senén Barro, Non-IID data and Continual Learning processes in Federated Learning: A long road ahead, Information Fusion, Volume 88, 2022, Pages 263-280, ISSN 1566-2535, https://doi.org/10.1016/j.inffus.2022.07.024.
7) Ziad Akram-Ali-Hammouri, Manuel Fernández-Delgado, Audi Albtoush, Eva Cernadas, Senén Barro, Ideal kernel tuning: Fast and scalable selection of the radial basis kernel spread for support vector classification, Neurocomputing, Volume 489, 2022, Pages 1-8, ISSN 0925-2312, https://doi.org/10.1016/j.neucom.2022.03.034.
8) M. Fernández-Delgado, J. Ribeiro, E. Cernadas, S. Barro, "Direct Parallel Perceptrons (DPPs): fast analytical calculation of the Parallel Perceptrons weights with margin control for classification tasks", IEEE Transactions on Neural Networks, Vol. 22, No. 11, 1837-1848, 2011, ISSN: 1045-9227 (Q1; 12/111, Computer Science, Artificial Intelligence).
9) Casado, F.E., Lema, D., Criado, M.F. *et al.* Concept drift detection and adaptation for federated and continual learning. *Multimed Tools Appl* **81**, 3397–3419 (2022). https://doi.org/10.1007/s11042-021-11219-x
10) M. Fernández-Delgado, E. Cernadas, D. Amorim, S. Barro, "Do We Need Hundreds of Classifiers to Solve Real World Classification Problems?", Journal of Machine Learning Research, Vol. 15, 3133-3181, 2014. ISSN 1533-7928 (electronic edition) y 1532-4435 (print issue).

[Highly cited article. Google Scholar data (July 2025]



This paper challenges the status quo in the field of classification problems to demonstrate we have an overabundance of low-value solutions, which have generated thousands of papers and which ultimately consume public time and resources.

SOME RECENT RESEARCH PROJECTS

- **ALIA-Linguistic models for Spanish languages**
  Role: Principal Resarcher.
  Funden by the Spanish Government.
  Overall budget: 1,400,000 €
  Start date: July 2025; end date: June 2026

- **USC-Plexus Tech AI Chair in Applied Precision Medicine**
  Role: Principal Researcher.
  Funded by the Spanish Government.
  Overall budget: 1,200,000 €
  Start date: September 2024; end date: 31.12.2025

- **ILENIA (Advancing Languages in Artificial Intelligence)**
  Role: Principal Researcher of the USC node
  Funded by the Spanish Government.
  Overall budget: 2,000,000 € (funding for the USC)
  Start date: January 2023; end date: 31.12.2025

- **NL4XAI: Interactive Natural Language Technology for Explainable Artificial Intelligence**.
  Role: ETN Coordinator. Funded by the H2020-MSCA-ITN-2019. Grant Agreement No. 860621.
  Overall budget: 2,843,888 €; CiTIUS budget: 501,809 €
  Start date: 01.10.19; end date: 30.09.23.
  Consortium: Univ. of Aberdeen, Agencia Estatal Consejo Superior de Investigaciones Científicas, Technishe Universiteit Delft, Centre National de la Recherche Scientifique, Univ. of Malta, Univ. Utrecht, Univ. of Twente, Politechnika Warszawska and Indra.

- **CiTIUS: Intelligent Technologies at every step.**
  Role: Principal Researcher and Scientific Director. Funded by Galicia Research Centres Programme, by the Galician Ministry of Education and University Planning, Xunta de Galicia (Regional Government).
  Overall budget: 2,207,777 €
  Start date: 01.01.20; end date: 31.10.22.

- **InVerbis: tell it in words**.
  Role: Principal Researcher. Funded by the Proof of Concept Programme, by the Galician Innovation Agency (GAIN), Xunta de Galicia (Regional Government).
  Overall budget: 361,217 €
  Start date: 01.01.19; end date: 30.09.20.

- **Spin-off Lean Acceleration (SOLA).**
  Role: Principal Investigator.
  Funding agency: EU Erasmus+ Project. Ref.: 561897-EPP-1-2015-1-ES-EPPKA2-CBHE-JP.
  Budget: 924,892 €
  Duration: 15/10/2015-14/03/2018.

IPR

- J. Presedo, P. Félix, S. Barro. BEATLABDetector. Ref. 03/2013/740 (University of Santiago de Compostela). Licensed to IMAXDI Real Innovation.
- J. Presedo, P. Félix, S. Barro. BEATLABAnalysis. Ref. 03/2013/741. (University of Santiago de Compostela). Licensed to IMAXDI Real Innovation.
- J. Presedo, P. Félix, S. Barro, D. Castro, D. González. BEATLABClustering. (University of Santiago de Compostela). Licensed to IMAXDI Real Innovation.
- J. Presedo, P. Félix, S. Barro, T. Teijeiro, A. Piñeiro. SERVANDOSaO2. Ref. (University of Santiago de Compostela). Licensed to IMAXDI Real Innovation.
- Alberto Bugarín Diz; Julio Janeiro Gallardo; Alejandro Ramos Soto; Senén Barro Ameneiro. SC-104-16. MonitorSI-Text España. 06/04/2016. (University of Santiago de Compostela) Licensed to Ozona Technologies.
- Alberto Bugarín Diz; Alejandro Ramos Soto; Félix Díaz Hermida; Senén Barro Ameneiro. 03/2014/1259. GALiWeather: application for the automatic generation of meteorological predictions in natural language in Spain, 30/06/2014. (University of Santiago de Compostela) Licensed to Meteogalicia, Xunta de Galicia.

SPIN-OFF CREATION

Situm Technologies S.L., created in 2014.
It is a spin-off of the USC that was born from the research carried out at CITIUS in the field of indoor localisation of autonomous mobile robots. In 2014 Situm starts the development and commercialisation of an SDK that allows mobile application developers to calculate their location inside a large building without the need for a large hardware installation in the building and with very high accuracy. Situm was included in the first Magic Quadrant, produced by Gartner in 2018, on indoor geolocation services. Situm has been backed with €3M by venture capital firms Unirisco, Xesgalicia, Prosegur Ventures, Amadeus Ventures and Swanlaab Venture Capital. This has allowed Situm's technology to be marketed today in more than 20 countries and to help millions of visitors to large buildings find their destination every month. Currently 70% of turnover is international, with Japan, the USA and the Middle East being the top three markets. In terms of sectors, airports, shopping centres and large hospital complexes make up the top 3 users of this technology.

InVerbis Analytics S.L., created in December 2020.
It is a spin-off of which I am one of the promoter-founders and is part of the research of the Intelligent Systems Group (which I created in 1990) at the confluence of two research lines: process mining and natural language generation. In 2018 we won a €360K Ignicia project from the Xunta de Galicia, which allowed us to move from the lab to the market in less than two years. In December 2020, InVerbis was created, obtaining more than €1M of investment in its first year of life. InVerbis has an algorithmic technology deployed in the cloud, through which it markets process mining services that places it in the Top 10 of Gartner Peer Insights in its category.

HONOURS AND AWARDS

- **National Computer Science Prize**, "José García Santesmases" (2020). Awarded by the Scientific Society in Computer Science of Spain and the BBVA Foundation.
- **Galician of the Year 2024 in Science.** Grupo Prensa Ibérica

- Fellow of the **Royal Academy of Sciences of Galicia**. Oct-2015 - present.
- **Corresponding academic** representing Galicia in the Reial Acadèmia de Doctors, 2012.
- Member of the **founding team** (2012) of the "Spanish Association of Scientific Entrepreneurs".
- **Galician excellence in the category of Sciences and Medicine**, 2010. Awarded by the association of Galician businessmen in Catalonia.
- Member of the "Spanish Association of Technologies and Fuzzy Logic" and of the "European Society for Fuzzy Logic and Technology". 1996-1999.
- **Lotfi Zadeh medal** awarded by the European Center for Soft Computing, 2009.
- **Doctorate Honoris Causa**, Universidad San Luis Gonzaga de Ica, Perú, 2007.
- **Doctor José Tola Pasquel Medal**, CINDA, 2006.
- **Best Paper & Thesis Awards (most recent ones)**

"IEEE The International Conference on Intelligent Data Science Technologies and Applications". A. Al-Btoush, M. Fernández-Delgado, E. Cernadas and S. Barro, "Extreme learning machine with confidence interval based bias initialization," *2021 Second International Conference on Intelligent Data Science Technologies and Applications (IDSTA)*, 2021, pp. 23-30, doi: 10.1109/IDSTA53674.2021.9660822.

"The International Conference on Artificial Intelligence (EPIA)". P. Gamallo et al., "A Galician-Portuguese Generative Model", Best Paper Application, EPIA2024, September 2024, Viana do Castelo, Portugal.

PhD Thesis: "Application of fuzzy sets in data-to-text systems", Alejandro Ramos Soto; supervisors: Senén Barro and Alberto Bugarín.

- National Computer Science Award Young Researchers modality, from the Spanish Scientific Society of Computer Science (SCIE) - BBVA Foundation, 2017.
- 2016 European Society for Fuzzy Logic and Technologies (EUSFLAT) Best PhD Thesis Award
- 2017 Best applied thesis of the Galician Association of Telecommunication Engineers
- 1st prize for the best app with Artificial Intelligence, Spanish Association for Artificial Intelligence (AEPIA), 2015