Julián D. Arias Londoño

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Summary

Julián D. Arias Londoño received a B.S. degree in Electronic Engineering and MEng. Degree in Engineering - Industrial Automation from the Universidad Nacional de Colombia (UNAL), Manizales, Colombia, in 2005 and 2007, respectively. In 2010, he completed a dual PhD in Computer Science and Automatics from the Universidad Politécnica de Madrid (UPM), Spain, and the UNAL. He also received the European Doctorate Mention from the UPM. Since 2012, he has been part of the Dpt. of Systems Engineering, Universidad de Antioquia, Medellín, Colombia, and was appointed in 2020 as a Full Professor. From March 2022 to December 2024, Julián was with the Dpt. of Signals, Systems, and Radiocommunications at UPM, Spain, as a Research Visitor under a María Zambrano grant funded by the European Union-NextGenerationEU. His fields of expertise are in the areas of computational intelligence, machine learning, and signal processing applied to the design and development of computer-aided diagnostic systems with a special focus on trustworthy AI. Julián is a senior member of the Institute of Electrical and Electronics Engineers (IEEE) and its Signal Processing and Computational Intelligence societies, and a member of the Ellis network. During his career, he has authored 35 JCR journal papers and more than 25 papers in top international peer-reviewed conferences. According to Google Scholar, his research has accumulated over 3000 citations, with an h-index of 28.

Education

2007–2010	**Doctor of Systems Engineering and Automatics**, *Universidad Politécnica de Madrid, Spain - Universidad Nacional de Colombia, Colombia.*, **European Doctorate Mention**
2005–2007	**Master of Engineering - Industrial Automation**, *Universidad Nacional de Colombia*, Manizales
2000–2005	**Electronic Engineering**, *Universidad Nacional de Colombia*, Manizales

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Academic Experience

2020 -	**Full Professor**, *Universidad de Antioquia*, Medellín, Colombia

2022 - 2024	**Visiting Researcher (María Zambrano Fellowship)**, *ETSIT*, *Universidad Politécnica de Madrid*, Madrid, Spain
2016 - 2020	**Associate Professor**, *Universidad de Antioquia*, Medellín, Colombia
2012 - 2016	**Assistant Professor**, *Universidad de Antioquia*, Medellín, Colombia
2010 - 2011	**Assistant Professor**, *Antonio Nariño University*, Bogotá D.C, Colombia

Research Projects (last 3 years)

2024-2026 Prodromal phospholipid signature of cognitive dysfunction and dementia. (2024-75530). Financed by Colombian Minister of Science, Technology and Innovation. *Position*: Part of the research team.

2022-2025 PD-RADAR: Screening and monitorization of Parkinson's disease using Radar-based biometrics" (TED2021-131688B-I00). Financed by the Spanish Minister of Science and Innovation. *Position*: Part of the research team.

2022-2025 DEPIA: Diagnosis and evaluation of Parkinson's disease using motor and non-motor biometrics. Financed by the Spanish Minister of Science and Innovation. *Position*: Part of the research team.

2020-2022 Artificial Intelligence and data-based technologies for understanding, detecting, and analyzing COVID-19" (CM-RIS3-REACT210024193B). Financed by Comunidad de Madrid. *Position*: Part of the research team.

Publications (most recent)

2025 Y. Sun, *et al.* Automatic semantic segmentation of the osseous structures of the paranasal sinuses. *Computerized Medical Imaging and Graphics*, ol. 123, 102541, 2025.

2025 E. J. Ibarra, *et al.* G Subject-Specific Modeling by Domain Adaptation for the Estimation of Subglottal Pressure from Neck-Surface Acceleration Signals. *Biomedical Signal Processing and Control*, vol. 106, 107681, 2025.

2025 E.G. Andrade-Miranda, *et al.* GIRAFE: Glottal Imaging Dataset for Advanced Segmentation, Analysis, and Facilitative Playbacks Evaluation. *Data in brief*, vol. 59, 111376, 2025.

2024 J. Mendes-Laureano, *et al.* NeuroVoz: a Castillian Spanish corpus of parkinsonian speech. *Scientific Data*, 11:1367, 2024.

2024 E. Luque-Buzo, *et al.* Estimation of the cyclopean eye from binocular Smooth Pursuit Tests. *IEEE Transactions on Cognitive and Developmental Systems*, vol. 16(6), pp 2125-2137, 2024.

2024 J.D. Arias- Londoño, J.I. Godino-Llorente. Analysis of the Clever Hans Effect in COVID-19 Detection Using Chest X-Ray Images and Bayesian Deep Learning. *Biomedical Signal Processing and Control*, vol. 90, 105831, 2024.

2024 E. Hernández-García, *et al.* A voice and speech corpus of patients who underwent upper airway surgery in pre- and post-operative states. *Scientific Data*, 11:746, 2024.

2023 J.D. Arias- Londoño, *et al.* Automatic identification of lung opacities due to COVID-19 from chest X-Ray images. Focussing the attention on the lungs. *Diagnostics*, vol. 13:1381, 2023.

2023 E.J. Ibarra, *et al.* Towards a Corpus (and Language)-Independent Screening of Parkinson's Disease from Voice and Speech through Domain Adaptation. *Bioengineering* vol. 10, no. 11, 1316, 2023.

2023 F.A. Bedoya-Guzmán, *et al.* BACE1 and SCD1 are associated with neurodegeneration. *Front. Aging Neurosci.* 15:1194203, 2023.

2023 M. Bejani, *et al.* Baseline wander removal applied to smooth pursuit eye movements from parkinsonian patients. *IEEE Access*, vol. 11, 2023.

Edition and conference committees participation

Editor

-Guest editor for the Special Issue on "Modelling and processing language and speech in neurodegenerative disorders", IEEE Journal of Selected Topics in Signal Processing (JSTSP), 2024-2025

-Handling editor of Frontiers in Public Health, 2022

-Associate Editor, Redin, ISSN 0120-6230. July, 2014-2021. (Q3 in SJR)

-Editor of the book: Applications of Computational Intelligence. *Communications in Computer and Information Science* , vols. 833, 1096, 1346, 1471, 1746, Springer, Cham.

Organizing committees

2024 Scientific Secretariat - 2nd Automatic Assessment of Parkinsonian Speech Workshop, Cambridge, MA, USA.

2024 General technical chair - IEEE Latin American Conference on Computational Intelligence, Bogotá, Colombia.

2018 - 2020 Technical chair - Colombian Conference on Applications in Computational Intelligence.

2012 Technical chair - XVII Symposium of Image, Signal Processing, and Artificial Vision . Medellín, Colombia.

2012 Publication chair - 47th Annual International Carnahan Conference on Security Technology. Medellín, Colombia.

Referee for Journals/Conferences and research project calls

-Poland National Center for Research and Development, call: Centres of Excellence AI of the ARTIQ Joint Undertaking Programme.

-Colombian Minister of Science: calls Sena Innova, 869, 901, 908

-Artificial Intelligence in Medicine, Engineering Applications on Artificial Intelligence, IEEE Transactions on Audio, Speech and Language Processing, Journal of the Acoustical society of America, IEEE Journal of Selected Topics in Signal Processing, IEEE Transactions on Biomedical Engineering, Speech Communications, EURASIP Journal on Advanced Signal Processing, Biomedical Signal Processing and Control, Medical and Biological Engineering and Computing, SpringerPlus, Computers in Biology and Medicine

-3rd Advanced Voice Function Assessment International Workshop, AVFA2009

-International Conference on Bio-inspired systems and signal processing, BIOSIGNALS 2014 - 2019

-The Annual Conference of the International Speech Communication Association INTERSPEECH 2017-2019, 2022

-Neural Information Processing Systems, NIPS 2020, 2022, 2025

-International Conference on Learning Representation, ICLR 2020, 2022, 2023, 2024

-International Conference on Machine Learning, ICML 2021, 2025

Honors and Awards

-R3 certification (established researcher), Spanish Research Agency, Ministry of Science, Innovation and Universities, Spain, 2023

-Member of the ELLIS network since 2022

-IEEE Senior member since 2017

-Senior researcher, Colombian Department of Science Technology and Innovation - Colciencias

-Best paper award in the 8th International Conference on Bioinformatics Models, Methods and Algorithms, 2017.

-European Doctorate Mention, Universidad Politécnica de Madrid, 2010.

-Best paper award given by the Spanish Thematic Network on Speech Technologies, 2010.

-Finalist of the best paper student award in the 31st annual international conference of the IEEE EMBS, 2009.