



Dr.-Ing. Tomás Arias-Vergara

Ph.D. in Computer Science

Education

2022 – Ph.D. in Computer Science (**Summa cum laude**)

- Research topic: Analysis of Pathological Speech Signals
- Bi-national program: Universidad de Antioquia (Colombia) & Friedrich-Alexander-Universität Erlangen-Nürnberg (Germany)

2017 – Master degree in Engineering (**with distinction**)

- Research topic: Parkinson's Disease Progression Assessment From Speech
- Universidad de Antioquia (Colombia)

2014 – Bachelor degree in Electronic Engineering

- Universidad de Antioquia (Colombia)

Areas of expertise

Machine learning ○ Pattern recognition ○ Digital signal processing ○ Pathological speech processing ○ Automatic Speech Recognition ○ High-speed videoendoscopy ○ Voice disorders

Language proficiency

- Spanish: native ○ English: C1 ○ German: A2

Fellowships, Awards, and Academic Memberships

2015

Young researchers and innovators scholarship
COLCIENCIAS (Colombia)

2017-2021

National PhD scholarship program
COLCIENCIAS (Colombia)

2018-2021

Early Stage Researcher under Marie Skłodowska-Curie grant
European Union's Horizon 2020

2021-present

Member of the Marie Curie Alumni Association (MCAA)
European Commission

2022-present

Member of the Andean-Caribbean Chapter of the MCAA
European Commission

2022

Junior researcher status
Ministry of Science, Technology, and Innovation (Colombia)

2022

Summa cum laude to the doctoral thesis
Friedrich-Alexander-Universität Erlangen-Nürnberg (Germany) & Univ
(Colombia)

2023

GI-Dissertation price nominee
Nominated by the Friedrich-Alexander-Universität



Current position

2023 - present – Postdoctoral researcher

- Pattern Recognition Lab
- Friedrich-Alexander-Universität Erlangen-Nürnberg (Germany)

Previous positions

2021 - 2023 – Postdoctoral researcher in computational medicine

- Topic: Machine learning methods for the analysis of voice disorders using high-speed videoendoscopy data
- Department of Otorhinolaryngology, Head and Neck Surgery
- University Hospital Erlangen (Germany)

2018 - 2021 – Marie Curie Research Fellow

- Topic: Automatic methods for the analysis of speech production of people with cochlear implants
- Department of Otorhinolaryngology, Head and Neck Surgery
- Ludwig-Maximilians Universität München (Germany)

2017 (Feb–Aug) – Software developer

- Faculty of Engineering
- Universidad de Antioquia (Colombia)

Teaching

2022 - present – Lecturer (Virtual program)

- Undergraduate: *Signal Processing I*
- Universidad de Antioquia (Colombia)

2022 (Jun–Dec) – Lecturer (Virtual program)

- Graduate: *Laboratory of Pattern Analysis*
- Universidad de Antioquia (Colombia)

2017 - 2019 – Lecturer (Onsite/Virtual program)

- Undergraduate: *Laboratory of Digital Signal Processing, Laboratory of Signal Processing III*
- Universidad de Antioquia (Colombia)

Reviewing services

Journals

- Movement disorders ○ Speech Communication ○ Biomedical Signal Processing and Control ○ Pattern Recognition Letters ○ ACM Transactions on Asian and Low-Resource Language Information Processing ○ IEEE/ACM Transactions on Audio, Speech, and Language Processing ○ IEEE Access ○ Diagnostics ○ Bulletin of the Polish Academy of Sciences: Technical Sciences ○ IEEE Journal of Biomedical and Health Informatics.

Conferences

- International Conference on Acoustics, Speech, & Signal Processing (ICASSP 2023) ○ IEEE Automatic Speech Recognition and Understanding Workshop (ASRU 2022) ○ Workshop on Engineering Applications (WEA 2019).

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Selected publications

For the complete list, please visit shorturl.at/ayL39

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🐦 [@tariasvergara
⌚ \[TARIASVERGARA\]\(https://ORCID.org/0000-0002-1111-1111\)](https://twitter.com/tariasvergara)

Journals

- **T. Arias-Vergara**, A. Batliner, T. Rader, D. Polterauer, C. Högerle, J. Müller, J. R. Orozco-Arroyave, E. Nöth, M. Schuster. *Adult CI users vs typical hearing persons: An automatic analysis of acoustic-prosodic parameters.* Journal of Speech, Language, and Hearing Research, Vol 65, pp 1-14, 2022.
- **T. Arias-Vergara**, P. Klumpp, J.C. Vásquez-Correa, J. R. Orozco-Arroyave, E. Nöth and M. Schuster. *Multi-channel spectrograms for speech processing applications using deep learning methods.* Pattern Analysis and Applications, Vol 24, pp 423–431, 2021.
- **T. Arias-Vergara**, P. Arguello-Velez, J. C. Vásquez-Correa, E. Nöth, M. Schuster, M. C. González-Rátiva, and J. R. Orozco-Arroyave. *Automatic detection of Voice Onset Time in voiceless plosives using gated recurrent units.* Digital Signal Processing, Vol 104. 2020.
- **T. Arias-Vergara**, J. C. Vásquez-Correa, J. R. Orozco-Arroyave, and E. Nöth. *Speaker models for monitoring Parkinson's disease progression considering different communication channels and acoustic conditions,* Speech Communication. Vol 101, pp 11-25, 2018.
- **T. Arias-Vergara**, J. C. Vásquez-Correa, and J. R. Orozco-Arroyave. *Parkinson's Disease and Aging: Analysis of Their Effect in Phonation and Articulation of Speech.* Cognitive Computation, pp 1-18, 2017.

Conferences

- **T. Arias-Vergara**, T. Madill, T. Schraut, M. Döllinger. *Overview of automatic voice onset measurements.* In 38. Wissenschaftliche Jahrestagung der DGPP. Leipzig, Germany. German Medical Science GMS Publishing House, 2022.
- P. Schäfer, P. A. Pérez-Toro, P. Klumpp, J. R. Orozco-Arroyave, E. Nöth, A. K. Maier, A. Abad, M. Schuster, **T. Arias-Vergara.** *CoachLea: an Android Application to Evaluate the Speech Production and Perception of Children with Hearing Loss.* Accepted to be presented at Interspeech 2022.
- **T. Arias-Vergara**, J. R. Orozco-Arroyave, M. Cernak, S. Gollwitzer, M. Schuster, E. Nöth. *Phone-attribute posteriors to evaluate the speech of cochlear implant users.* In Proceeding of the 20th INTERSPEECH, Graz, Austria, pp. 3108-3112, 2019.
- **T. Arias-Vergara**, P. Klumpp, J. C. Vásquez-Correa, J. R. Orozco-Arroyave, and E. Nöth. *Unobtrusive Monitoring of Speech Impairments of Parkinson's Disease Patients Through Mobile Devices.* In Proceedings of ICASSP, Calgary, Canada, pp. 6004-6008, 2018.



References

Prof. Dr.-Ing. habil. Elmar Nöth

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Prof. Dr. med. Maria Schuster

- Klinikum der Universität München (Germany).
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Prof. Dr.-Ing Juan Rafael Orozco-Arroyave

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17.02.2023

Dr.-Ing. Tomás Arias Vergara

Date