

Carlos Arana

PhD. in Engineering

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Education

- 2023 **Ph.D. in Engineering and AI Specialist** , University of Buenos Aires - Lomas de Zamora, Argentina
Thesis: *Artificial Intelligence in Music Education: Development of a Learning Environment Based on Generative Neural Networks*
- 2016 **Specialization in Business Intelligence and Data Mining**, Universidad Austral, Buenos Aires - Argentina
- 1996 **Bachelor in Industrial Engineering**, University of Buenos Aires, Buenos Aires - Argentina
- 1991 **Certified Professional Guitarist - ITMC**, ITMC (Contemporary Music Institute), Buenos Aires - Argentina

Postgraduate Studies

- **Statistical Learning** - Stanford University - Stanford - USA
- **Neural Networks for Audio and Music** - CCRMA, Stanford University, Stanford - USA
- **Musical Applications of Machine Learning** - KAIST, Korean Advanced Institute of Science and Technology - Seoul - Republic of Korea
- **Robotics for SMEs** - Fundación Banco Ciudad Buenos Aires - Argentina
- **Applied Statistics in Public Opinion and Electoral Behavior** - FLACSO - Facultad Latinoamericana de Ciencias Sociales Buenos Aires - Argentina

Academic and Teaching Experience

- **Author and Professor of Artificial Intelligence for Music and Audio** - Berklee College of Music (Boston - USA)
- **Professor of Computer Programming for Musicians** - Berklee College of Music (Boston - USA)
- **Professor of Music Theory 101** - Berklee College of Music (Boston - USA)
- **Professor of Data Analytics in the Music Business** - Berklee College of Music (Boston - USA)
- **Professor of Brazilian Guitar** - Brazilian Embassy in Argentina (Buenos Aires - Argentina)
- **Visiting Lecturer of Data Science and AI** - Instituto Tecnológico de Monterrey - (Monterrey - Mexico)

- **Professor of Data Science and Big Data** - UBA - *Universidad de Buenos Aires (Buenos Aires - Argentina)*
- **Professor of Artificial Intelligence** - UCA - *Universidad Católica Argentina (Buenos Aires - Argentina)*
- **Professor of Data Science for Business** - UCEMA - *Universidad del CEMA - (Buenos Aires - Argentina)*
- **Professor of Business Analytics** - UCEMA - *Universidad del CEMA - (Buenos Aires - Argentina)*

Books Authored

- **Hal Leonard Brazilian Guitar Method** (Hal Leonard, USA) - 2013
<https://www.halleonard.com/product/697415>
- **Bossa Nova Guitar** (Hal Leonard, USA) - 2009
<https://www.halleonard.com/product/695978>
- **Getz/Gilberto - Transcribed Scores by Carlos Arana** (Hal Leonard, USA) - 2011
<http://www.halleonard.com/product/1333>
- **Brazilian Rhythms for Guitar** (Warner Bros Publ. - Alfred, USA) - 2006
<http://www.alfred.com/Products/Brazilian-Rhythms-for-Guitar--00-0764B.aspx>

Academic Contributions and Leadership

- Created and Developed the **first worldwide course on "Artificial Intelligence for Music and Audio"** - Berklee College of Music. Boston - USA
- Created and Developed the **first "Data Mining and Big Data"** course at the Graduate School of Engineers at the **University of Buenos Aires** - Argentina. The course is constantly updated, and now it is called "Data Science and AI"
- Redesignated **"Analytics in the Music Business"** course at Berklee College of Music, integrating Machine Learning and AI.
- Redesignated **"Programming for Musicians"** course for Berklee College of Music, adding Web Audio API JavaScript applications.
- Created and Developed the **"Brazilian Guitar"** course for the **Cultural Division of the Brazilian Embassy in Argentina**.
- Created and Developed **"Industrial Robotics"** module for the course of "Industrial Automation" at **UBA - Universidad de Buenos Aires**.
- Created and Developed the **"Data Science in Business"** course for UCEMA's **MBA program**.
- Created and Developed the **"Artificial Intelligence"** course for the **Computer Engineering** program at UCA - Universidad Católica Argentina.

Professional Experience

- **Founded and managed** for 15 years "CADARA - Musician's Library", a pioneering company in Argentina and neighboring countries that specialized in importing, distributing, and retailing musical publications, including **sheet music, instructional book/CDs methods, instructional DVDs and online music methods**. Since its inception, Cadara has been dedicated to providing the musical community with unparalleled access to the complete catalogs from publishers such as **Hal Leonard, Warner Bros. Publications, Alfred Publications, Music Sales, Advance Music, Jamey Aebersold**, among many others

- **Session Guitarist**, Music Brokers Records. He specializes in recording Bossa Nova versions for this label, known for its reissues of popular music across various genres.
- **Produced** several recordings In **Nashville-TN** with Dave Pomeroy (Willie Nelson, Dolly Parton) and recorded with musicians like Chris Leuzinger (Garth Brooks) and Steve Smith (Willie Nelson, Don Williams).
- He was for years an integral part of the **Brazilian music scene**, performing in bands such as "Bebeto e a Mixtureba" and "Os Novos Caipiras." . **He conducted a profound research into the country's diverse musical styles from a didactical perspective** which culminated in the authorship of **three instructional books**, and a **Complete Scores Transcription edition**.
- He was part of the band of the **legendary Brazilian singer Maria Creuza**, a living legend of Bossa Nova. **He recorded and performed with worldwide renowned musicians** such as Luis Salinas, Raul Carnota, Alfredo Remus, Oscar Stagnaro, Daniel Maza, Javier Malosetti, Oscar Giunta, among many others.

Conferences, Workshops, and Public Speaking

- **AES (American Engineering Society) Symposium - "AI and the Musician"** - *(Boston USA) - 2024*
- **Generative Music AI Workshop** - Music Technology Group - Universitat Pompeu Fabra - *(Barcelona - Spain) - 2023*
- **National Data Science Education** - UC Berkeley - *(Berkeley - USA) - 2020, 2021 and 2022*
- **Artificial Intelligence Latin American SumMIT** - MIT (Massachusetts Institute of Technology) - *(Cambridge - USA) - 2020*
- **Statistics and Data Science** - UNTREF - *(Buenos Aires - Argentina)-2018*
- **Data Science in Business** - Global Faculty Week Instituto Tecnológico de Monterrey - *(Monterrey - Mexico) - 2021*
- **Workshop "O Samba e o Tango: Differences and Similarities Between the Musical Genres of Rio de Janeiro and Rio de la Plata"** - Berklee College of Music *(Boston - USA) - 2019 and 2020*
- **Courses "Bossa Nova Guitar I and II"** - Old Town School of Folk Music *(Chicago - USA) - 2017*

Publications and Research Contributions

- Arana, C. (2021). **"Artificial Intelligence Applied to Education: Achievements, Trends, and Prospects."** INNOVA UNTREF.
- Arana, C. (2021). **"Recurrent Neural Networks: Sequential Data Model Analysis."** UCEMA Working Papers.
- Arana, C. (2021). **"Machine Learning Models Using Decision Trees."** UCEMA Working Papers.

Language Proficiency

- **Spanish** - Native
- **English** - Advanced (Fluent)
- **Portuguese** - Advanced (Fluent)

Website

- www.carlosarana.com.ar