

# Juan S. Gómez-Cañón

ELECTRONIC ENGINEER · MUSICIAN

Barcelona, Spain

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## Education

### MTG-UPF (Music Technology Group - Universitat Pompeu Fabra)

Barcelona, Spain

PH.D. IN INFORMATION AND COMMUNICATION TECHNOLOGIES

Oct. 2018 - Oct. 2022 (Exp.)

- Thesis: Human-centered machine learning for music emotion recognition
  - My research is focused on the development of these algorithms taking into account individual and contextual differences of listeners. *Context-sensitive* MER systems draw on factors from the listener's context (e.g., listening mood, uses of music, physiological signals), and *personalized* MER systems incorporate information from the listener's properties (e.g., individual annotations, musical expertise, preference).
  - Supervisors: Prof. Emilia Gómez, Dr.-Ing. Estefanía Cano, Prof. Perfecto Herrera

### TUI-IDMT (TU Ilmenau - Fraunhofer Institute for Digital Media Technology)

Ilmenau, Germany

M.Sc. IN MEDIA TECHNOLOGY

Apr. 2016 - Jun. 2018

- Thesis: Automatic Instrument Recognition using Deep Convolutional Networks
  - Implementation of a CNN for instrument recognition in polyphonic audio mixtures and use of source separation algorithms to improve classification performance.
  - Supervisors: Prof. Karlheinz Brandenburg, Dr.-Ing. Jakob Abesser, Dr.-Ing. Estefanía Cano
- Media project: Audio object localization and recognition using multiple microphones on a robotic platform
  - Creation of a real-time audio processing framework in Python to run on a single board computer and control a robot's motion towards a source of interest (i.e., speech) in adverse acoustic environments (e.g., reverberation, noise and music).
  - Supervisor: Prof. Gerald Schuller

### UNIANDÉS (Universidad de los Andes)

Bogotá, Colombia

B.Sc. IN MUSIC MAJORING IN AUDIO PRODUCTION

Aug. 2008 - Mar. 2013

- Thesis: Acoustic characterization of an anechoic chamber
  - Supervisor: Prof. Juana Rodríguez

### UNIANDÉS (Universidad de los Andes)

Bogotá, Colombia

B.Sc. IN ELECTRONIC ENGINEERING

Aug. 2005 - Oct. 2011

- Thesis: Wireless networks for rural schools in Villa de Leyva
  - Supervisor: Prof. Roberto Bustamante

## Selected Publications

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|------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|
|      | <b>SPM</b> , J.S. Gómez-Cañón, E. Cano, T. Eerola, P. Herrera, X. Hu, Y.H. Yang, E. Gómez, <i>Music Emotion Recognition: Toward new, robust standards in personalized and context-sensitive applications</i> , IEEE Signal Processing Magazine 38 (6), pp. 106-114.                                                       | <a href="#">Link</a> |
| 2021 |                                                                                                                                                                                                                                                                                                                           |                      |
|      | <b>ISMIR</b> , J.S. Gómez-Cañón, E. Cano, Y.H. Yang, P. Herrera, E. Gómez, <i>Let's agree to disagree: Consensus Entropy Active Learning for Personalized Music Emotion Recognition</i> , Proceedings of the 22nd International Society for Music Information Retrieval Conference (ISMIR), pp. 237-245.                  | <a href="#">Link</a> |
| 2021 |                                                                                                                                                                                                                                                                                                                           |                      |
|      | <b>HCAI-NeurIPS</b> , J.S. Gómez-Cañón, E. Cano, P. Herrera, E. Gómez, <i>Personalized musically induced emotions of not-so-popular Colombian music</i> , HCAI Human Centered AI Workshop at the 35th Conference on Neural Information Processing Systems (NeurIPS 2021).                                                 | <a href="#">Link</a> |
| 2021 |                                                                                                                                                                                                                                                                                                                           |                      |
|      | <b>ISMIR</b> , J.S. Gómez-Cañón, E. Cano, P. Herrera, E. Gómez, <i>Joyful for you and tender for us: the influence of individual characteristics and language on emotion labeling and classification</i> , Proceedings of the 22nd International Society for Music Information Retrieval Conference (ISMIR), pp. 853-860. | <a href="#">Link</a> |
| 2020 |                                                                                                                                                                                                                                                                                                                           |                      |

## Skills

**Programming** Python · Matlab · Bash  
**Libraries** Sci-kit learn · PyTorch · Keras · Plotly  
**Languages** Spanish (native) · English (C1) · German (B1)

## Work Experience

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### Fraunhofer Institute for Digital Media Technology

RESEARCH ASSISTANT

*Ilmenau, Germany*

*Jun. 2018 - Aug. 2018*

- Porting code from Matlab to Python for automatic source separation and onset detection.

### UNICENTRAL-UMA (Universidad Central - Audiovisual Media Unit)

ENGINEER

*Bogotá, Colombia*

*Feb. 2014 - Dec. 2015*

- Installation of a new full HD television studio with Panasonic Studio 300 system.
- Design and implementation of a big-data/high-speed system for on-line audiovisual edition and production with fiber optics and centralized file system.
- Live video transmission of events.

### MONTECZ S.A.

TELECOMMUNICATIONS SUPERVISOR

*Quito & Sto. Domingo, Ecuador*

*Jul. 2013 - Dic. 2013*

- ICT supervision of the modernization project of the oil pipeline Quito-Esmaldas of PetroEcuador.
- Supervision of the installation and deployment of fiber optics, and construction of telecommunication towers.

### SOFTWARE shop

PRODUCT MANAGER

*Bogotá, Colombia*

*Jun. 2011 - Jun. 2013*

- Develop and provide training of specialized music/video software tools for marketing support on sales.

## Awards

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2015 **Scholarship**, DAAD (Deutsche Akademische Austausch Dienst)

*Germany*

2015 **Scholarship**, COLFUTURO (Fundación para el Futuro de Colombia)

*Colombia*

## Interests

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**Amateur musician**, guitar, harmonica, keyboard, and blues

**Sports**, Bicycle and basketball