Juan S. **Gómez-Cañón**

ELECTRONIC ENGINEER · MUSICIAN

Barcelona, Spain

(+34) 691557348 | juans.gomez87@gmail.com | juansgomez87.github.io | juansgomez87 | js.gomez-canon

Education

MTG-UPF (Music Technology Group - Universitat Pompeu Fabra) *Barcelona, Spain*

PH.D. IN INFORMATION AND COMMUNICATION TECHNOLOGIES *Oct. 2018 - Oct. 2022*

- 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). Grade *excellent, cum laude* mention.
  - Supervisors: Prof. Emilia Gómez, Dr.-Ing. Estefanía Cano, Prof. Perfecto Herrera
  - Research Stay: Prof. Tuomas Eerola (Durham University, UK)

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

UNIANDES (Universidad de los Andes) *Bogotá, Colombia*

B.A. IN MUSIC MAJORING IN AUDIO PRODUCTION *Aug. 2008 - Mar. 2013*

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

UNIANDES (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

2022   **JIIS**, J.S. Gómez-Cañón, N. Gutiérrez-Páez, L. Porcaro et al. *TROMPA-MER: an open dataset for personalized music emotion recognition*, Journal of Intelligent Information Systems, pp. 1-22. *Link*

2021   **SPM**, J.S. Gómez-Cañón, E. Cano, T. Eerola, P. Herrera, X. Hu, Y.H. Yang, E. Gómez, *Music Emotion Recognition: Toward new, robust standards in personalized and context-sensitive applications*, IEEE Signal Processing Magazine 38 (6), pp. 106-114. *Link*

2021   **ISMIR**, J.S. Gómez-Cañón, E. Cano, Y.H. Yang, P. Herrera, E. Gómez, *Let's agree to disagree: Consensus Entropy Active Learning for Personalized Music Emotion Recognition*, Proceedings of the 22nd International Society for Music Information Retrieval Conference (ISMIR), pp. 237-245. *Link*

2021   **HCAI-NeurIPS**, J.S. Gómez-Cañón, E. Cano, P. Herrera, E. Gómez, *Personalized musically induced emotions of not-so-popular Colombian music*, HCAI Human Centered AI Workshop at the 35th Conference on Neural Information Processing Systems (NeurIPS 2021). *Link*

2020   **ISMIR**, J.S. Gómez-Cañón, E. Cano, P. Herrera, E. Gómez, *Joyful for you and tender for us: the influence of individual characteristics and language on emotion labeling and classification*, Proceedings of the 22nd International Society for Music Information Retrieval Conference (ISMIR), pp. 853-860. *Link*

Skills

Programming	Python · Javascript · ReactJS · Docker · Bash
Libraries	Sci-kit learn · PyTorch · Tensorflow · Plotly · Flask · Dash
Languages	Spanish (native) · English (C1) · German (B1)

Work Experience

Discos Fuentes Edimúsica S.A.
Bogotá, Colombia

EXTERNAL CONSULTANT
Oct.2022 - Present

- Designing and developing a machine learning algorithm for mood recognition to the Licenciame catalog of music.
- Creation of a visualization tool in ReactJS and Plotly to better understand the predictions of the deep learning algorithm developed to predict moods (see `http://www.musicalsourceseparation.com/`).

Universitat Pompeu Fabra
Barcelona, Spain

TEACHING ASSISTANT
Oct. 2018 - Oct. 2022

- Teacher for seminars and labs to the Signals and Systems class to bachelor students from the ICT department.

Fraunhofer Institute for Digital Media Technology
Ilmenau, Germany

RESEARCH ASSISTANT
Jun. 2018 - Aug. 2018

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

UNICENTRAL-UMA (Universidad Central - Audiovisual Media Unit)
Bogotá, Colombia

ENGINEER
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.
Quito & Sto. Domingo, Ecuador

TELECOMMUNICATIONS SUPERVISOR
Jul. 2013 - Dic. 2013

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

SOFTWARE shop
Bogotá, Colombia

PRODUCT MANAGER
Jun. 2011 - Jun. 2013

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

Awards

2015	**Scholarship**, DAAD (Deutsche Akademische Austausch Dienst)		*Germany*
2015	**Scholarship**, COLFUTURO (Fundación para el Futuro de Colombia)		*Colombia*

Interests

Amateur musician, guitar, harmonica, keyboard, and blues

Sports, Bicycle and basketball