



Xavier Serra is Full Professor of the Department of Information and Communication Technologies and Director of the Music Technology Group at the Universitat Pompeu Fabra in Barcelona. After a multidisciplinary academic education, he obtained a PhD in Computer Music from Stanford University in 1989 with a dissertation on the spectral processing of musical sounds that is considered a key reference in the field. His research interests cover the computational analysis, description and synthesis of sound and music signals, with a balance between basic and applied research and approaches from both scientific/technological and humanistic/artistic disciplines. Dr. Serra is very active in fields of Audio Signal Processing, Sound and Music Computing, Music Information Retrieval and Computation Musicology at the local and international levels, being involved in the editorial board of a number of journals and conferences and giving lectures on current and future challenges of these fields. He was awarded an Advanced Grant of the European Research Council to carry out the project CompMusic aimed at promoting multicultural approaches in music information research. More information in: <https://www.upf.edu/web/xavier-serra>

<b>PERSONAL INFORMATION .....</b>	<b>2</b>
<b>EDUCATION .....</b>	<b>2</b>
<b>PHD THESIS.....</b>	<b>2</b>
<b>CURRENT PROFESSIONAL SITUATION.....</b>	<b>2</b>
<b>EMPLOYMENT HISTORY .....</b>	<b>2</b>
<b>CURRENT MANAGEMENT RESPONSIBILITIES AT UPF.....</b>	<b>2</b>
<b>CURRENT TEACHING ACTIVITIES .....</b>	<b>3</b>
<b>OTHER CURRENT PROFESSIONAL RESPONSIBILITIES.....</b>	<b>3</b>
<b>PAST MANAGEMENT RESPONSIBILITIES AT UPF.....</b>	<b>3</b>
<b>OTHER PAST MANAGEMENT RESPONSIBILITIES .....</b>	<b>3</b>
<b>OTHER PAST PROFESSIONAL RESPONSIBILITIES.....</b>	<b>3</b>
<b>EXPERIENCE IN ORGANIZATION OF R+D ACTIVITIES .....</b>	<b>4</b>
<b>PERSONAL DISTINCTIONS AND AWARDS .....</b>	<b>4</b>
<b>ACADEMIC MERITS .....</b>	<b>5</b>
<b>DISTINCTIONS AND AWARDS GIVEN TO THE RESEARCH GROUP.....</b>	<b>5</b>
<b>RELEVANT TALKS AND SEMINARS .....</b>	<b>5</b>
<b>COMPETITIVE RESEARCH PROJECTS .....</b>	<b>9</b>
<b>RELEVANT FUNDED INDUSTRIAL PROJECTS.....</b>	<b>17</b>
<b>SUPERVISED PHD THESIS .....</b>	<b>20</b>
<b>PUBLICATIONS.....</b>	<b>25</b>

**PATENTS.....39**

## PERSONAL INFORMATION

LAST NAME: Serra  
FIRST NAME: Xavier  
D.N.I.: 36.936.560  
DATE OF BIRTH: Sept. 10<sup>th</sup>, 1959  
HOME ADDRESS: Granvia Tomas Balvey 73 bis, Cardedeu 08440, Spain  
TELEPHONE: (34) 938713120

## EDUCATION

1989 PhD in Music Technology, Stanford University (October).  
1983 Master in Music, Florida State University (June).  
1981 Bachelor in Biology (Licenciatura), Universitat de Barcelona (June).  
1970-1981 Music studies at the Conservatori Superior Municipal de Música de Barcelona.

## PHD THESIS

**Title:** “A System for Sound Analysis/Transformation/Synthesis based on a Deterministic plus Stochastic Decomposition”

**Thesis supervisor:** Dr. John Chowning

**Jury of thesis defense:** Dr. Julius O. Smith III, Dr. Earl Schubert, Dr. Max V. Mathews

## CURRENT PROFESSIONAL SITUATION

INSTITUTION: Universitat Pompeu Fabra, Barcelona  
DEPARTMENT: Department of Information and Communication Technologies  
POSITION AND DATE OF START: Full Professor since 30/11/2017  
ADDRESS: Roc Boronat 138, 08018 Barcelona  
TELEPHONE: (34) 935422164  
EMAIL: xavier.serra@upf.edu  
WEBSITE: <https://www.upf.edu/web/xavier-serra>

## EMPLOYMENT HISTORY

2017 - Full Professor (Catedrático) at UPF  
1996-2017 Associate Professor (Profesor Titular) at UPF  
1995-1996 Visiting Professor (Profesor Visitante) at UPF  
1991-1994 Post-doc at Phonos Foundation  
1989-1991 Chief Engineer at Yamaha Music Technologies USA, Inc.

## CURRENT MANAGEMENT RESPONSIBILITIES AT UPF

1994 - Founder and head of the Music Technology Group (MTG).  
2012 - Head of the ASP-Lab of the MTG.  
2008 - Coordinator of the Master in Sound and Music Computing of the Department of Information and Communication Technologies.  
2008 - Member of the Postgraduate and Doctoral Studies Commission of the Department of Information and Communication Technologies.  
2008 - Member of the Faculty Commission of the Department of Information and Communication Technologies.  
2018 - Member of the Faculty Commission of the UPF.

## **CURRENT TEACHING ACTIVITIES**

- 2014 - Audio and Music Processing for Music Applications. MOOC on Coursera.
- 2017 - Signals and Systems I. Undergraduate course of the Department of Information and Communication Technologies, Universitat Pompeu Fabra.
- 2018 - Sound, Speech and Music Processing. Undergraduate course of the Department of Information and Communication Technologies, Universitat Pompeu Fabra.
- 2008 - Audio and Music Processing for Music Applications. Master course of the Department of Information and Communication Technologies, Universitat Pompeu Fabra.

## **OTHER CURRENT PROFESSIONAL RESPONSIBILITIES**

- 2017 - Co-founder and Chief Research Officer of Music Muni Labs.
- 2011 - President of Phonos Foundation.
- 2008 - Member of the International Society for Music Information Retrieval.
- 2005 - Member of the European Association for Signal Processing.
- 1999 - Member of the editorial board of the Journal of New Music Research.
- 2008 - Member of the Scientific Committee of the Sound and Music Computing Conference.
- 1998 - Member of the Scientific Committee of the Digital Audio Effects Conference.
- 2013 - Member of the International Advisory Council of the Centre for Interdisciplinary Research in Music Media and Technology (CIRMMT) of McGill University (Montreal, Canada).
- 2018 - Member of the Advisory Board of RITMO Centre for Interdisciplinary Studies in Rhythm, Time and Motion, of the University of Oslo (Norway).

## **PAST MANAGEMENT RESPONSIBILITIES AT UPF**

- 2016-2020 Scientific Director of the Maria de Maeztu Strategic program of the Department of Information and Communication Technologies.
- 2004-2020 Member of the Commission for Information Resources and Technology Strategies.
- 2013-2016 Member of the Postgraduate and Doctoral Studies Commission.
- 2009-2013 Member of the Culture Activities Commission.
- 2009-2013 Member of the Permanent Commission of the Department of Information and Communication Technologies.
- 2009-2013 Vice-president of the Research Commission of the Department of Information and Communication Technologies.
- 2004-2007 Director of the Department in Information and Communication Technologies.
- 2000-2004 Director of the Audiovisual Institute.
- 1999-2004 Director of the PhD program of the Department in Information and Communication Technologies.
- 1999-2004 Member of the Research Policy Commission.

## **OTHER PAST MANAGEMENT RESPONSIBILITIES**

- 2003-2010 Vice-president of the Phonos Foundation.
- 2002-2005 Head of the Department of Sonology of the Escola Superior de Música de Catalunya.
- 1992-1999 Executive Director of the Phonos Foundation.

## **OTHER PAST PROFESSIONAL RESPONSIBILITIES**

- 2009-2018 Co-founder and Board member of Reactable Systems Inc.
- 2015-2017 Member of the Special Area Team on Acoustic, Sound and Music Signal Processing of the European Association for Signal Processing.
- 2001-2017 Associate Professor of the Department of Information and Communication Technologies of the UPF.
- 2006-2012 Co-founder and Scientific advisor of Barcelona Music and Audio Technologies Inc.
- 1991-2009 Invited researcher and teacher at the Center for Computer Research in Music and Acoustics from Stanford University.

- 1997-2008 Scientific reviewer of the International Computer Music Conference.  
1983-2008 Member of the International Computer Music Association.  
1998-2002 Spanish delegate and vice-president of the Executive Committee of the G6 Action “Digital Audio Effects” of the European Program COST.

## **EXPERIENCE IN ORGANIZATION OF R+D ACTIVITIES**

- 2019 Organizer of the Barcelona Music Technology Forum (UPF, Barcelona, June 27-28)  
2018 Organizer of the European Music Research Conference (UPF, Barcelona, June 11-13)  
2016 Organizer of the Seminar on Music Knowledge Extraction Using Machine Learning (UPF, Barcelona, December 4)  
2016 Organizer of the Data-driven Knowledge Extraction Workshop (UPF, Barcelona, Spain, June 28-29).  
2016 Member of Program Committee of the Summer School on Music Science and Technology Research (MuSTeR) (Indian Institute of Science, Bangalore, India, May 9 –12).  
2013 Chair of the 3rd CompMusic Workshop (Chennai, India, December 13-14).  
2012 Chair of the 2nd CompMusic Workshop (Istanbul, Turkey, July 12-13).  
2012 Chair of the 1st CompMusic Workshop (Gurgaon, India, January 20).  
2010 General Chair of the 7<sup>th</sup> Sound and Music Computing Conference (Barcelona, July 21-24).  
2009 Scientific Programme Chair of the 6<sup>th</sup> Sound and Music Computing Conference (Porto, July 23-29).  
2007 Co-organizer of the Workshop on Music, Brain and Cognition at NIPS (Whistler, Canada)  
2006 President of the Organizing Committee of the Summer School in Sound and Music Computing (Barcelona, July 24-28).  
2005 Member of the Organizing Committee of the 118th Audio Engineering Society Convention (Barcelona, May 28-31).  
2005 President of the Program Committee of the International Computer Music Conference (Barcelona, September 5-9)  
2004 President of the Organizing Committee of the International Conference in Music Information Retrieval (Barcelona, October 10-14)  
2001 President of the Organizing Committee of the Workshop on Current Research Directions in Computer Music (Barcelona, November 14-16)  
1998 President of the Organizing Committee of the International Conference on Digital Audio Effects (Barcelona, November 19-21)

## **PERSONAL DISTINCTIONS AND AWARDS**

- 2019 ICREA Academia Prize. Generalitat de Catalunya.  
2018 Google Research Award for Freesound Datasets.  
2017 Proof of Concept Grant for TECSSOME. European Research Council.  
2016 “Teaching activity at Master level” Prize given by UPF Board of Trustees.  
2016 Best paper award at 6<sup>th</sup> International Workshop Folk Music Analysis, June 15-17.  
2017 Proof of Concept Grant for CAMUT. European Research Council.  
2013 Best paper award at 14th International Workshop on Content-based Multimedia Indexing, June 15-17.  
2013 ICREA Academia Prize by the Generalitat de Catalunya.  
2010 Advanced Grant for CompMusic. European Research Council.  
2009 Google Research Award for Freesound.  
2008 ICREA Academia Prize by the Generalitat de Catalunya.  
2007 Universitat Pompeu Fabra Medal.  
2007 Google Research Award for Freesound.  
2005 City of Barcelona Prize in Multimedia for the Freesound project.  
1997 Swets & Zeitlinger Distinguished Paper Award at the International Computer Music Conference.  
1994 Grant from the Catalan Government to spend half a year in the USA.  
1992 Postdoctoral Scholarship from the Spanish Ministry of International Affairs to return to Spain (2 years).  
1989 Research and Teaching assistantship from Stanford University (6 years).  
1983 Scholarship from Comité Conjunto Hispano Norteamericano para Asuntos Educativos y Culturales to start PhD at Stanford University (2 years).

- 1981 Scholarship from Caixa de Barcelona to study the Master at Florida State University (2 years).  
1983 Pi Kappa Lambda, Phi Kappa Phi (academic distinctions at Florida State University).

### ACADEMIC MERITS

- 3 Spanish Research "Sexenios": 01/01/1996 to 31/12/2001; 01/01/2002 to 31/12/2008; 01/01/2009 to 31/12/2014  
4 Spanish Teaching "Quinquenios": 01/01/1995 to 31/12/1999; 01/01/2000 to 31/12/2004; 01/01/2005 to 31/12/2009; 01/01/2010 to 31/12/2014  
3 Autonomic Research "Sexenios": 01/01/1996 to 31/12/2001; 01/01/2002 to 31/12/2008; 01/01/2009 to 31/12/2014  
4 Autonomic Teaching "Quinquenios": 01/01/1995 to 31/12/1999; 01/01/2000 to 31/12/2004; 01/01/2005 to 31/12/2009

### DISTINCTIONS AND AWARDS GIVEN TO THE RESEARCH GROUP

- 2016 3<sup>rd</sup> price of the Knowledge Transfer category by the Board of Trustees of the UPF.  
2013 ACM Multimedia Open-Source Competition Award.  
2008 Golden Nica Award of the Prix Electronica for the Reactable.  
2008 Honorary Mention of the Prix Electronica for Freesound.  
2008 Two D&AD yellow pencil awards for the Reactable.  
2008 BMW Initiative Award.  
2007 UPF Innovation Award.  
2007 Reactable chosen the most innovative instrument at MIDEM.  
2007 City of Barcelona Price in multimedia for the Reactable.  
2006 2nd prize of the Semantic Web Challenge for Foafing the Music.

### RELEVANT TALKS AND SEMINARS

- April 16<sup>th</sup>, 2020: "Signal Processing and Machine Learning Challenges in Sound and Music Computing", ICASSP 2020 (Barcelona, Spain). Invited ETON talk.  
December 2<sup>nd</sup>-6<sup>th</sup>, 2019: Workshop on Computational Musicology and Indian Music, IIT-B (Mumbai, India). Teacher.  
December 8<sup>th</sup>, 2019: "Current Trends and Challenges in Music Information Processing", IIT-Dharwad (Dharwad, India). Invited talk.  
September 28<sup>th</sup>, 2019: "From Digital to Human Intelligence in Music Understanding Research", Improtech 2019 (Athens, Greece), Invited talk.  
September 24<sup>th</sup>, 2019: "Gathering, Analyzing, and Structuring the Digital Artifacts of a Musical Culture: a Research Perspective", CMO Workshop (Istanbul, Turkey), Invited talk.  
March 3<sup>rd</sup>, 2018: "Computational studies of several non-western musical repertoires", Eastman School of Music, University of Rochester (New York), Invited talk.  
March 2<sup>nd</sup>, 2018: "Music Information Retrieval approaches for Music Understanding", Department of Electrical and Computer Engineering, University of Rochester (New York), Invited talk.  
September 3<sup>rd</sup>, 2017: "CompMusic project: motivations, results, reflections", 16th Brazilian Symposium on Computer Music (São Paulo, Brasil), Keynote.  
March 22<sup>nd</sup>, 2017. Presentation of CompMusic at the International Musicological Society 20th Quinquennial Congress (Tokyo, Japan). Invited talk.  
October 27<sup>th</sup>, 2016: Presentation of CompMusic at the conference on "Frontier Research and Science Diplomacy" organized by the European Research Council (Brussels, Belgium), Invited talk.  
July 1<sup>st</sup>, 2016: "The computational study of a musical culture through its digital traces", Conference of the International Musicological Society (Stavanger, Norway), Keynote.  
June 29<sup>th</sup>, 2016: "Machine learning approaches for structuring large sound and music collections", Data-driven Knowledge Extraction Workshop, UPF, Barcelona, June 28<sup>th</sup>-29<sup>th</sup> 2016.  
June 28<sup>th</sup>, 2016: "The MdM Knowledge Extraction Strategic Research Program at DTIC-UPF", Data-driven Knowledge Extraction Workshop, UPF, Barcelona, June 28<sup>th</sup>-29<sup>th</sup> 2016.  
May 9<sup>th</sup>-12<sup>th</sup>, 2016: "Audio Signal Processing for Music Applications", Summer School on Music Science and

- Technology Research (MuSTeR), Indian Institute of Science (Bangalore, India), Organizer and teacher.
- May 7<sup>th</sup>, 2016: “CompMusic: Technologies for exploring and teaching Indian Classical Music”, IIT Bombay, (Mumbai, India), Invited talk.
- February 24<sup>th</sup>, 2016: “CompMusic project”, Yıldırım Beyazıt Üniversitesi (Ankara, Turkey). Invited talk.
- February 23<sup>rd</sup>, 2016: “Music Information Retrieval from a Cultural Perspective”, Bilkent University (Ankara, Turkey). Invited talk.
- February 22<sup>nd</sup>, 2016: “Music Information Retrieval from a Cultural Perspective”, Middle East Technical University (Ankara, Turkey). Invited talk.
- February 18<sup>th</sup>, 2016: “Introduction to CompMusic and Dünya”, Istanbul Technical University Turkish Music Conservatory, (Istanbul, Turkey). Invited talk.
- February 17<sup>th</sup>, 2016: “Music Information Retrieval from a Cultural Perspective”, Boğaziçi University (Istanbul, Turkey). Invited talk.
- February 16<sup>th</sup>, 2016: “Introduction to CompMusic and Dünya”, Yıldız Technical University (Istanbul, Turkey). Invited talk.
- November 30<sup>th</sup>, 2015: “The AudioCommons Initiative and the technologies for facilitating the reuse of open audio content”, Digital Audio Effects Conference (Trondheim, Norway). Tutorial.
- October 1<sup>st</sup>, 2015: “Music Information Retrieval from a Multicultural Perspective”, IRCAM (Paris, France). Invited talk.
- August 7<sup>th</sup>, 2015: “Music Information Retrieval from a Multicultural Perspective”, SoundCloud (Berlin, Germany). Invited talk.
- June 4<sup>th</sup>, 2015: “Research highlights in my journey within the field of Sound and Music Computing”, Universitat Pompeu Fabra (Barcelona). Invited talk.
- May 17<sup>th</sup>, 2015: “Computational Methods for Jingju Music Research: the CompMusic project”, Fudan University (Shanghai, China), Invited talk.
- May 18<sup>th</sup>, 2015: “Computational Methods for Jingju Music Research: the CompMusic project”, Shanghai Conservatory of Music (Shanghai, China). Invited talk.
- May 19<sup>th</sup>, 2015: “Computational Methods for Jingju Music Research: the CompMusic project”, Ningbo University (Ningbo, China). Invited talk.
- May 21<sup>st</sup>, 2015: “Computational Methods for Jingju Music Research: the CompMusic project”, Peking University (Beijing, China). Invited talk.
- May 22<sup>nd</sup>, 2015: “Computational Methods for Jingju Music Research: the CompMusic project”, China Conservatory, University (Beijing, China). Invited talk.
- May 23<sup>rd</sup>, 2015: “Computational Methods for Jingju Music Research: the CompMusic project”, Peking University Chinese Music Institute (Beijing, China). Invited talk.
- May 25<sup>th</sup>, 2015: “Computational Methods for Jingju Music Research: the CompMusic project”, Communication University of China (Beijing, China). Invited talk.
- May 27<sup>th</sup>, 2015: “Computational Methods for Jingju Music Research: the CompMusic project”, National Academy of Chinese Theatre Arts (Beijing, China). Invited talk.
- May 7<sup>th</sup>, 2015. “Music Information Research from a Cultural Perspective”, 138<sup>th</sup> International AES Convention (Warsaw, Poland). Tutorial.
- April 6<sup>th</sup>, 2015: “Music Information Retrieval from a Multicultural Perspective”, Stanford University (California, USA). Invited talk.
- April 3<sup>rd</sup>, 2015: “Music Information Retrieval from a Multicultural Perspective”, University of California in Santa Barbara (California, USA). Invited talk.
- January 28<sup>th</sup>, 2015: “Music Information Retrieval from a Multicultural Perspective”, CalArts (Valencia, California, USA). Invited talk.
- January 26<sup>th</sup>, 2015: “Music Information Retrieval from a Multicultural Perspective”, University of California in San Diego (California, USA). Invited talk.
- October 13<sup>th</sup>, 2014: “Rhythm analysis in the CompMusic project.” Rhythm Workshop, NYU Abu Dhabi (Abu Dhabi, United Arab Emirates). Invited talk.
- June 26<sup>th</sup>, 2014: “Exploiting Cultural Specificity in Music Information Research.” 21<sup>st</sup> International Symposium on Methodologies for Intelligent Systems (Roskilde, Denmark). Keynote.
- June 11<sup>th</sup>, 2014. “Introduction to CompMusic and Dünya.” CompMusic Seminar. Culture specific approaches in music technology: Turkish music case (Istanbul, Turkey). Invited talk.
- May 12<sup>th</sup>, 2014: “Introduction to CompMusic.” CompMusic Seminar: Computational analysis of Indian art music

- (Mumbai, India). Invited talk.
- January 27<sup>th</sup>, 2014: "Creating Research Corpora for the Computational Study of Music: the case of the CompMusic Project." AES 53rd International Conference on Semantic Audio (London, UK). Invited talk.
- December 17<sup>th</sup>, 2013: "Computational description of Carnatic and Hindustani music." 87th Annual Conference of the Music Academy Madras (Chennai, India). Invited talk.
- November 30<sup>th</sup>, 2013: "Heu complert, ara ja sou lliures." Universitat Pompeu Fabra (Barcelona, Spain). Graduation speech.
- November 4<sup>th</sup>, 2013: "Music Information Research: State of the Art and Future Challenges." University of Sao Paulo (Brazil). Invited talk.
- September 2<sup>nd</sup>, 2013: "Singing voice synthesis in the context of music technology research." 8<sup>th</sup> ISCA Speech Synthesis Workshop (Barcelona, Spain). Keynote.
- July 31<sup>st</sup>, 2013: "Exploiting Domain Knowledge in Music Information Research." SMAC Stockholm Music Acoustics Conference 2013 & SMC Sound and Music Computing Conference 2013 (Stockholm, Sweden). Keynote.
- March 19<sup>th</sup>, 2013: "Opportunities and Challenges in Rhythm Research Using Data-driven and Culture Specific Approaches." Rhythm Workshop, NYU Abu Dhabi (Abu Dhabi, United Arab Emirates). Invited talk.
- February 5<sup>th</sup>, 2013: "Information Technologies and World Music." Digitalia (Salvador, Brazil). Invited talk.
- November 5<sup>th</sup>, 2012: "Computational Models for the Discovery of the World's Music." ERC Workshop (Barcelona, Spain). Invited talk.
- September 9<sup>th</sup> 2012: "Sound Synthesis for Computer Games." IEEE Signal Processing Society Summer School on Game Audio, Middle East Technical University (Ankara, Turkey). Invited seminar.
- July 6<sup>th</sup> 2012: "The Need for Multicultural Web Technologies." WebVisions (Barcelona, Spain). Invited talk.
- May 2012: Invited talks on CompMusic at Taiwan Normal University (Taipei, Taiwan), National Taiwan University (Taipei, Taiwan), Academia Sinica (Taipei, Taiwan), Beijing University of Post and Telecommunication (Beijing, China), Institute of Acoustics Chinese Academy of Sciences (Beijing, China), China Conservatory of Music (Beijing, China), Renmin University of China (Beijing, China), Institute of Computer Science & Technology, Peking University (Beijing, China), Tsinghua University (Beijing, China).
- April 23<sup>rd</sup> 2012: "Knowledge Transfer Practices in Music Technology Research." Training workshop: Establishing relationships with industry, CIRMMT, McGill University (Canada). Invited talk.
- March 3<sup>rd</sup> 2012: "Instruments musicals, tecnologia i context cultural." Museu de la Música, Curs d'Organologia (Barcelona, Spain). Invited talk.
- February 29<sup>th</sup> 2012: "Information technologies for the discovery of culture specific music repertoires." Harmony and variation in music information retrieval Symposium (Utrecht, Netherlands). Invited talk.
- January 19<sup>th</sup> 2012: "CompMusic: Computational models for the discovery of the world's music." Frontiers of Research in Speech and Music (FRSM) (Gurgaon, India). Keynote talk.
- November 18<sup>th</sup> 2011: "Tecnología Musical, Redes Sociales y Multiculturalidad." Dept. de Teoria de la Señal, Telemática y Comunicaciones, University of Granada (Spain). Invited talk.
- July 18<sup>th</sup> 2011: "Com serà la Música de la Web 3.0?." Festa de la Ciència, (Barcelona, Spain). Invited talk.
- November 9<sup>th</sup> 2011: "The need of a multicultural approach in IT research." European Computer Science Summit (ECSS) (Milan, Italy). Keynote talk.
- July 11<sup>th</sup> 2011: "Multiculturalism in Music Information Research." Telefonica Multimedia Workshop, Telefónica I+D (Barcelona, Spain). Invited talk.
- May 2011: "CompMusic: Computational models for the discovery of the world's music." Queen Mary (London, UK). Invited talk.
- May 2011: Invited talks on CompMusic in India, at IIT-Madras, IISC-Bangalore, IIIT-Hyderabad, Jadavpur University, IIT-Bombay.
- February 2011: Invited talks on CompMusic in Turkey, at Bogaziçi University, Istanbul Technical University, Yildiz Technical University, Koç University, Chamber of EE at Izmir.
- January 2011: "Audio Content Analysis and Retrieval." Winter School on Speech and Audio Processing 2010 (Bombay, India). Invited talk.
- September 22<sup>nd</sup> 2010: "Research approaches and challenges in Sound and Music Computing." Electronics Meets Challenges of the 21st Century (Warsaw, Poland). Invited talk.
- March 20<sup>th</sup> 2010: "New audio technologies for new architectural spaces." Smart Geometry Conference (Barcelona, Spain). Invited talk.
- December 14<sup>th</sup> 2009: "Music creation technology and its impact on social networks." TEDx Barcelona (Spain).

Invited talk.

- November 21<sup>st</sup>, 2009: 10th Festival International de Artes Digitais, Porto, Portugal, 2009. "Technology Trends, Social Context and their Impact on the Musical Culture." Invited talk.
- November 2<sup>nd</sup>, 2009: "The Music Technology Group of the Universitat Pompeu Fabra in Barcelona." SIGMUS Symposium, Tokyo, Japan, 2009. Invited talk.
- October 30<sup>th</sup>, 2009: "The discipline formerly known as MIR." 2nd Workshop on the Future of MIR, Kobe, Japan, 2009. Invited talk.
- October 22<sup>nd</sup>, 2009. "Scientific and Technological Challenges of Musical Interest." Dotzè Congrès Internacional de l'Associació Catalana d'Intel·ligència Artificial, Cardona, Spain, 2009. Invited talk.
- September 8<sup>th</sup>, 2009: "Freesound.org and the collaborative production of sounds." Google Tech Talk, California, 2009. Invited talk.
- May 16<sup>th</sup>, 2009: "Els Instruments Electrònics del Segle XX: una història d'amor entre música i tecnologia." CosmoCaixa, Barcelona 2009. Invited talk.
- March 16<sup>th</sup>, 2009: "Technologies to Support the Collaborative Production of Sounds: The Example of Freesound.org." Unlocking Audio 2, London, 2009.
- December 22<sup>nd</sup>, 2008: "Trends in Sound and Music Computing." AES Portugal 2008, Lisbon, Portugal. Keynote.
- November 2<sup>nd</sup>, 2008: "Music Content Description." Telefònica I+D, Barcelona, 2008. Invited talk.
- November 17<sup>th</sup>, 2008: "A Tutorial on Sound and Music Computing." November 17<sup>th</sup>, International Conference for High Performance Computing, Networking, Storage and Analysis (SC2008) Austin, Texas, USA. 2008. Invited tutorial.
- November 13<sup>th</sup>, 2008: "La Música en la Nova Societat Tecnificada." Innova Música, Andorra, 2008. Keynote.
- September 25<sup>th</sup>, 2008: "Explotació de la producció col·laborativa de continguts multimèdia." 22@Update Breakfast 2008. Invited talk.
- September 27<sup>th</sup>, 2008: "Research in Music Technology: Artistic and Scientific Challenges." Music, Science and the Brain Workshop, Plymouth, UK, 2008. Invited talk.
- June 7<sup>th</sup> 2008: "Technological innovation in the current social context: Who is really in control?." June 7<sup>th</sup> 2008. International Conference New Interfaces for Musical Expression (NIME 2008) (Genova, Italy). Keynote.
- May 20<sup>th</sup> 2008: "La tecnología musical: entre el arte y la ciencia." Science Museum of Pamplona, 2008. Invited talk.
- April 9<sup>th</sup> 2008: "Sound Analysis and Synthesis for Multimedia Applications." Media Technology Days at the University of Linköping, 2008. Invited talk.
- January 8<sup>th</sup> 2008: "Technologies for Describing and Sharing Sounds: the Freesound example." Communia Workshop, Torino, Italy, 2008. Invited talk.
- November 9<sup>th</sup> 2007: "Informàtica i Música." CosmoCaixa, Barcelona 2006. Invited talk.
- July 10<sup>th</sup> 2007: Google Tech Talk, Mountain View, California, USA, 2007. "From Sound Synthesis to Sound Retrieval and Back." Invited talk.
- July 7<sup>th</sup> 2007: "State of the Art and Future Directions in Musical Sound Synthesis." Politecnico of Milan, Italy, 2007. Invited talk.
- May 12<sup>th</sup> 2007: "Spectral Models of Audio Signals: Music Applications." Helmholtz Workshop, 2007, Berlin, Germany. Invited talk.
- June 2<sup>nd</sup> 2006: "From Sound to Meaning: Current Directions in Music Technology Research." Formation and Deformation of the visual and acoustic space, Rome, 2006. Invited talk.
- December 19<sup>th</sup> 2005: "Bridging the Music Semantic Gap." IST Info-Day 2005, Brussels, Belgium. Invited talk.
- December 14<sup>th</sup> 2005: "From the Fourier Transform to the Development of Musical Applications based on Spectral Models of Audio Signals." University of Belfast, UK, 2005. Invited talk.
- Museu de la Música, Barcelona, 2004. "Els Instruments Electrònics del segle XX." Invited talk.
- September 10<sup>th</sup> 2003: "Spectral Modeling Synthesis: Past and Present." DAFX 2003, London, UK. Keynote.
- May 8<sup>th</sup> 2003. "Computer Music Research: Past and Present." University of Oslo, Norway, 2003. Invited talk.
- December 1999: "Current approaches to the spectral modeling of musical sounds". Diderot Forum, Viena, Austria, 1999. Invited talk.
- June 28<sup>th</sup> 1999: "Panorama del Tratamiento Digital del Sonido". Primeras Jornadas de Artes Digitales: Imagen, Música y Multimedia, 1999, Universidad de Morón, Buenos Aires, Argentina. Invited talk.
- May 9<sup>th</sup> 1999: "Trends in Sound Synthesis and Processing Research". 106th AES Convention, Munich, Germany, 1999. Invited talk.
- August 12<sup>th</sup> 1999: "Virtual Worlds/Real Sounds." SIGGRAPH, Los Angeles, USA, 1999. Tutorial.



- 1997: "Integrating Complementary Spectral Models in the Analysis, Transformation and Synthesis of Musical Sounds". Tempo Reale, Florence, Italy. Invited talk.
1996. "Beyond Sampling", International Symposium on Electronic Arts, Rotterdam, Netherlands. Talk.
1995. "De la Realidad a la Virtualidad: Direcciones Actuales de la Sintesis Digital del Sonido". Intermusic, Valencia, Spain. Invited talk.
- August 2<sup>nd</sup> 1994. "Current Directions in Digital Synthesis". I Brazilian Symposium on Computer Music. 1994, Caxambu, Brazil. Invited talk.
1994. "Técnicas de Análisis y Síntesis de Sonido Basadas en Modelos Espectrales", Festival el Callejón del Ruido, Guanajuato, Mexico, Invited talk.
1994. "L'ordinador dins la música: Perspectives Actuals", UAB, Sabadell, Spain, Invited talk.
1994. "Du réel au virtuel: Orientations actuelles de la synthèse sonore numérique", FAUST, Toulouse, France, Invited talk.

## COMPETITIVE RESEARCH PROJECTS

### *Next generation of music monitoring technology (NextCore)*

Funding agency: Ministerio de Ciencia e Innovación  
Partners: BMAT (Coordinador), Universitat Pompeu Fabra  
Principal Investigator: Xavier Serra  
Reference: RTC2019-007248-7  
Duration: 01/10/2020 to 31/09/2023  
Funding: 223.973 €

### *Artificial intelligence to support musical experiences: towards a data-driven, human-centred approach (Musical AI)*

Funding agency: Ministerio de Ciencia e Innovación  
Partners: Universitat Pompeu Fabra  
Principal Investigator: Xavier Serra  
Reference: PID2019-111403GB-I00  
Duration: 01/06/2020 to 31/05/2024  
Funding: 215.017 €

### *Infrastructure for data capture, processing, visualization and listening*

Funding agency: Ministerio de Ciencia, Innovación y Universidades  
Partners: Department of Information and Communication Technologies, Universitat Pompeu Fabra  
Principal Investigator: Xavier Serra  
Reference: EQC2018-004236-P  
Date: 7/12/2018  
Funding: 217.009 €

### *Musical Bridges: Bridging cultures through music understanding*

Funding agency: RecerCaixa  
Partners: Universitat Pompeu Fabra  
Principal Investigator: Xavier Serra  
Duration: 01/03/2018 to 28/02/2021  
Funding: 86.283 €

### *New Frontiers in Music Information Processing (MIP-Frontiers)*

Funding agency: EC-Horizon 2020  
Partners: Queen Mary University of London (Coordinator), Universitat Pompeu Fabra, Institut Mines-Telecom, Universitat Linz, Sony Europe Limited, Doremir Music Research AB, Roli Ltd  
Principal Investigator at UPF: Xavier Serra  
Reference: H2020 – 765068  
Duration: 01/04/2018 to 28/02/2022  
Funding: 743.618 €

***Technologies for Supporting Online Music Education (TECSOME)***

Funding agency: European Research Council, PoC

Partners: Universitat Pompeu Fabra

Principal Investigator: Xavier Serra

Reference: H2020 – 768530

Duration: 01/10/2017 to 31/03/2019

Funding: 150.000 €

***Infrastructure for data management and visualization***

Funding agency: Ministerio de Economía y Competividad

Partners: Department of Information and Communication Technologies, Universitat Pompeu Fabra

Principal Investigator: Xavier Serra

Reference: UNPF15-EE-3293

Date: 29/06/2016

Funding: 359.000 €

***DTIC-MdM Strategic Program on Data-Driven Knowledge Extraction***

Funding agency: Ministerio de Economía y Competividad

Partners: Department of Information and Communication Technologies, Universitat Pompeu Fabra

Principal Investigator: Xavier Serra

Reference: MDM-2015-0502

Duration: 01/01/2016 to 31/12/2019

Funding: 2.000.000 €

***Music Information Gathering, Structuring and Processing for Semantic Audio Applications (MINGUS)***

Funding agency: Ministerio de Economía y Competividad

Partners: Universitat Pompeu Fabra

Principal Investigator: Xavier Serra

Reference: TIN2015-69935-P MINECO/FEDER

Duration: 01/01/2016 to 31/12/2018

Funding: 37.873 €

***Audio Commons: An Ecosystem for Creative Reuse of Audio Content***

Funding agency: EC-ICT

Partners: Universitat Pompeu Fabra (Coordinator), Queen Mary University of London (UK), University of Surrey (UK), Jamendo SA (Luxemburg), AudioGaming (France), Waves Audio LTD (Israel)

Principal Investigator: Xavier Serra

Reference: H2020 – 6888382

Duration: 01/02/2016 to 31/01/2019

Funding: 765.000 €

***Culture Aware Music Technologies (CAMUT)***

Funding agency: European Research Council, PoC

Partners: Universitat Pompeu Fabra

Principal Investigator: Xavier Serra

Reference: H2020 – 680608

Duration: 02/11/2015 to 01/05/2017

Funding: 150.000 €

***Musical Building Blocks for Digital Makers and Content Creators (MusicBricks)***

Funding agency: EC-ICT

Partners: Sigma Orionis SA (France) (Coordinator), Stromatolite Design Lab (UK), Universitat Pompeu Fabra (Spain), Technische Universitaet Wien (Austria), Institut de Recherche et Coordination Acoustique/Musique (France), Fraunhofer-Gesellschaft zur Foerderung der Angewandten Forschung E.V. (Germany)

Principal Investigator at UPF: Xavier Serra

Reference: H2020 - 644871

Duration: 01/01/2015 to 30/06/2016

Funding: 143.125 €

***Auditory-motor patterning in Music performance via Multimodal Analysis of Playing technique (MUSMAP)***

Funding agency: EC-ICT

Partners: Universitat Pompeu Fabra

Principal Investigator: Xavier Serra

Reference: H2020 – 331270

Duration: 01/04/2014 to 31/03/2017

Funding: 221.191 €

***Análisis de Señal para el Descubrimiento de Repertorios de Música Tradicional (SIGMUS)***

Funding agency: Ministerio de Economía y Competitividad

Partners: Universitat Pompeu Fabra

Principal Investigator: Xavier Serra

Reference: TIN2012-36650

Duration: 01/01/2013 to 31/12/2015

Funding: 103.428 €

***Computational models for the discovery of the world's music (CompMusic)***

Funding agency: European Research Council, AdG

Partners: Universitat Pompeu Fabra

Principal Investigator: Xavier Serra

Reference: FP7-267583

Duration: 01/07/2011 to 30/06/2017

Funding: 2.443.200 €

***Roadmap for Music Information Research (MIReS)***

Funding agency: EC-ICT

Partners: Stomatolite Design Lab (UK), Universitat Pompeu Fabra (Spain) (Coordinator), Österreichische Studiengesellschaft für Kybernetik (Austria), Institut de Recherche et Coordination Acoustique/Musique (France), Instituto de Engenharia de Sistemas e Computadores do Porto (Portugal), Queen Mary, University of London (UK), Barcelona Music and Audio Technology (Spain)

Principal Investigator at UPF: Xavier Serra

Reference: FP7-287711

Duration: from 01/10/2011 to 31/03/2013

Funding: 105.359 €

***Social Interaction and Entrainment using Music Performance Experimentation (SIEMPRE)***

Funding agency: EC-ICT

Partners: Università degli Studi di Genova (Italy) (Coordinator), Universitat Pompeu Fabra (Spain), Queen's University Belfast (UK), University de Geneva (Switzerland), Fondazione Istituto Italiano di Tecnologia (Italy)

Principal Investigator at UPF: Xavier Serra

Reference: FP7-250026

Duration: 01/05/2010 to 30/06/2013

Funding: 296.982 €

***Descripción y Recuperación de Información Musical y Sonora (DRIMS)***

Funding agency: Ministerio de Ciencia e Innovación

Partners: Universitat Pompeu Fabra (Coordinator), Universidad de Alicante

Principal Investigator: Xavier Serra

Reference: TIN2009-14247-C02-01

Duration: 01/01/2010 to 31/12/2012

Funding: 190.575 €

***Classical Planet***

Funding agency: Plan Avanza del Ministerio de Industria

Partners: Fundación Isaac Albéniz (Coordinator), Fundación Instituto de Música de Cámara de Madrid, Universitat Pompeu Fabra

Principal Investigator at UPF: Xavier Serra

Reference: TSI-070100-2009-407

Duration: from 01/07/2009 to 31/01/2012

Funding: 51.400 €

***Música 3.0: Creación, Interacción, Socialización***

Funding agency: Plan Avanza del Ministerio de Industria

Partners: Universitat Pompeu Fabra (Coordinator), Barcelona Music and Audio Technologies

Principal Investigator: Xavier Serra

Reference: TSI-070100-2008-318

Duration: 01/01/2008 to 30/06/2011

Funding: 442.756 €

***Estándares globales entre el mundo real y los mundos virtuales (Metaverse 1)***

Funding agency: Ministerio de Industria, Turismo y Comercio

Partners: Industrial partners: Philips (Coordinator), Alcatel-Lucent, OrangeLabs, Technicolor, others; Research partners: UPF, INRIA, Utrecht Uni., others

Principal Investigator at UPF: Xavier Serra

Reference: TSI-020400-2008-98

Duration: 01/01/2008 to 31/12/2009

Funding: 207.622 €

***Sound and Music for Everyone Everyday Everywhere Every way (SAME)***

Funding agency: EC-IST

Partners: Università degli Studi di Genova (Italy) (Coordinator), Nokia Research Center (Finland), Kungliga Tekniska Högskolan (Sweden), Universitat Pompeu Fabra (Spain), Helsinki University of Technology (Finland), Institut de Recherche et Coordination Acoustique/Musique (France)

Principal Investigator at UPF: Xavier Serra

Reference: FP6-215749

Duration: 01/01/2008 to 31/12/2010

Funding: 315.000 €

***Platform for search of Audiovisual Resources across Online Spaces (PHAROS)***

Funding agency: EC-IST

Partners: Engineering – Ingegneria Informatica (Italy) (Coordinator), France Telecom (France), Fast Search & Transfer (FAST) (Norway), L3S Research Center (Germany), Fraunhofer IDMT (Germany), Ecole Polytechnique Fédérale de Lausanne (Switzerland), The Knowledge Media Institute, Open University (U.K.), Universitat Pompeu Fabra (Spain), VTT Technical Research Centre (Finland), Circom Regional - France, Metaware (Italy), Web Models (Italy), SAIL LABS Technology (Austria)

Principal Investigator at UPF: Xavier Serra

Reference: FP6-45035

Duration: 01/01/2007 to 31/12/2009

Funding: 468.440 €

***Procesamiento Semántico de Música Digital (PROSEMUS)***

Funding agency: Ministerio de Educación y Ciencia

Partners: Universitat Pompeu Fabra (Coordinator), Universidad de Alicante

Principal Investigator: Xavier Serra

Reference: TIN2006-14932-C02-01  
Duration: 26/12/2006 to 25/12/2009  
Funding: 157.300 €

***Collaborative Authoring of Localized Cultural Heritage Contents over the Next Generation of Mashup Web Services (Variazioni)***

Funding agency: EC – eContentPlus

Partners: Fundación Isaac Albéniz (Coordinator), Germinus XXI, University of Florence, Rigel Engineering, Universitat Pompeu Fabra, Lithuanian Academy of Music and Theatre, Koninklijk Conservatorium Brussel, Escola Superior de Música e das Artes do Espectáculo do Porto, Sibelius Academy, Association Européenne des Conservatoires, Exitech

Principal Investigator at UPF: Xavier Serra

Reference: ECP- 2005 - CULT- 038264

Duration: 01/09/2006 to 31/03/2009

Funding: 261.210 €

***Sistemas de Trabajo en Red con Conciencia de Contenido enfocados hacia la Asistencia Avanzada y Adaptada (CANTATA)***

Funding agency: Ministerio de Industrial, Turismo y Comercio

Partners: Bosch Security Systems, Philips Electronics Netherlands, Philips Medical Systems, Philips Consumer Electronics, TU/e, Multitel, ACIC, Barco, Traficon, IBBT, VTT, Solid, Antro, Capacity Networks, I&IMS, Telefónica, VICOMTech, Universitat Pompeu Fabra, CRP Henri Tudor, Codasystem, Kingston University, University of Cork, INRIA

Principal Investigator at UPF: Xavier Serra

Reference: FIT-350200-2006-33

Duration: 01/07/2006 to 30/06/2009

Funding: 312.000 €

***The Platform for Search of Audiovisual Resources Across Online Spaces (SALERO)***

Funding agency: EC – IST

Partners: Joanneum Research (Coordinator), NXN Software GMBH, TVC Netmedia Audiovisual S.L., Cinesite (Europe) Ltd, Fundació Barcelona Media Universitat Pompeu Fabra, Universitat Ramon Llull, Dublin Institute of Technology, Taideteollinen Korkeakoulu, The University of Glasgow, Leopold-Franzens Universität Innsbruck

Principal Investigator at UPF: Xavier Serra

Reference: FP6-45035

Duration: 01/01/2007 to 31/12/2009

Funding: 468.440 €

***Music Open Distance Exchange Model (MODEM)***

Funding agency: EC – Leonardo

Partners: I.T.C.G. “Atilio Deffenu” di Olbia (Coordinator), Universitat Pompeu Fabra, Steinberg France, Istituto di Scienze e Tecnologie de l’Informazione di Pisa, MIDIware (Roma, Scierter /Bologna), Sintagma (Roma), MI-7 (Malmo), Brighton Art Ltd (Brighton)

Principal Investigator at UPF: Xavier Serra

Reference: I/05/B/F/PP-154059

Duration: 01/10/2005 to 30/09/2007

Funding: 50.000 €

***Emergent music cognition in natural and artificial interactive systems (EmCAP)***

Funding agency: EC – IST

Partners: University of Plymouth (Coordinator), Universitat Pompeu Fabra, Magyar Tudományos Akadémia Pszichológiai Kutatóintézet, Universiteit van Amsterdam

Principal Investigator at UPF: Xavier Serra

Reference: FP6-013123

Duration: 01/10/2005 to 30/09/2008

Funding: 275.106 €

***Processing Music (PROMUSIC)***

Funding agency: Ministerio de Ciencia y Tecnología

Partners: Universitat Pompeu Fabra (Coordinator), IIIA-CSIC

Principal Investigator: Xavier Serra

Reference: TIC 2003-07776-C02

Duration: 01/12/2003 to 31/11/2006

Funding: 160.800 €

***Semantic Interaction with Musical Audio Content (SIMAC)***

Funding agency: EC – IST

Partners: Universitat Pompeu Fabra (Coordinator), Matrix Data; ÖFAI-Austrian Research Institute for Artificial Intelligence, Philips Research Eindhoven, QMUL - Queen Mary University of London.

Principal Investigator: Xavier Serra

Reference: FP6-507142

Duration: 01/01/2004 to 31/04/2006

Funding: 584.944 €

***Browsing, Listening, Interacting, Performing, Sharing on Future HiFi Systems (Semantic-HIFI)***

Funding agency: EC – IST

Partners: Institut de Recherche et Coordination Acoustique/ Musique (F) (Coordinator), Fraunhofer Gesellschaft, Institute for Digital Media Technology/Institute for Integrated Circuits (D), Sony France (F), Universitat Pompeu Fabra (SP), Ben Gurion University (IS), Native Instruments (D), Sony NSC Europe (B), Sony Deutschland (D)

Principal Investigator at UPF: Xavier Serra

Reference: FP6-507913

Duration: 01/12/2003 to 31/11/2006

Funding: 217.280 €

***European Multilingual Digital Data Collection for Multimedia Content in Music Heritage (HARMOS)***

Funding agency: EC- eContent

Partners: Fundación Isaac Albéniz (FIA) (Spain) (Coordinador), Universitat Pompeu Fabra (Spain), OrbiTeam (DE), Association of European Conservatoires (AEC), Lithuanian Academy of Music (LI), Koninklijk Conservatorium Brussel, Hochschule für Musik Köln (DE), Royal College of Music (UK), The Higher School of Music of Catalonia, ESMuC (Spain); Escola Superior de Música e Artes do Espectáculo del Instituto Politécnico do Porto (Portugal)

Principal Investigator at UPF: Xavier Serra

Reference: EDC 11189-HARMOS/2877

Duration: 01/04/2004 to 31/03/2006

Funding: 211.765 €

***Sound to Sense, Sense to Sound (S2S^2)***

Funding agency: EC – IST

Partners: Media Innovation Unit - Firenze Tecnologia (Italy) (Coordinator); Kungl Tekniska Högskolan (Sweden); CSC DEI, Università di Padova (Italy); DI-VIPS, Università di Verona (Italy); DIST, Università di Genova (Italy); Helsinki University of Technology (Finland); PECA DEC, Ecole Normale Supérieure, (France); IPEM (Belgium); LEAD (France); Universitat Pompeu Fabra (Spain); OFAI Austrian Research Institute for Artificial Intelligence (Austria)

Principal Investigator at UPF: Xavier Serra

Reference: FP6-003773

Duration: from 01/06/2004 to 31/05/2007

Funding: 106.380 €

***Entorno de programación para el procesamiento del contenido musical (AUDIOCLAS)***

Funding agency: Ministerio de Ciencia y Tecnología - PROFIT

Partners: Universitat Pompeu Fabra (Espanya) (Coordinator), Tape Gallery (Inglaterra), Duy S.A. (Espanya)  
Principal Investigator: Xavier Serra  
Reference: TIC2003-07776-CO2  
Duration: 01/12/2003 to 30/11/2006  
Funding: 184.920 €

***Xarxa de Centres de Suport a la Unnivació Tecnologica***

Funding company: CIDEM, Departament d'Indústria, Comerç i Turisme de la Generalitat de Catalunya  
Principal Investigator: Xavier Serra  
Reference: XIT/2002  
Duration: 30/12/2001 to 31/12/2002  
Funding: 60.101 €

***A GNU/Linux Audio distribution (AGNULA)***

Funding agency: EC - IST  
Partners: IRCAM (Institut de Recherche et Coordination Acoustique/Musique), Kung Tekniska Högskolan (KTH), Music Acoustics Group, Stockholm, Free Software Foundation Europe, Red Hat France, Universitat Pompeu Fabra.  
Principal Investigator at UPF: Xavier Serra  
Reference: IST-2001-34879  
Duration: from 01/04/2002 to 31/03/2004  
Funding: 270.632 €

***Xarxa de Centres de Suport a la Unnivació Tecnologica***

Funding company: CIDEM, Departament d'Indústria, Comerç i Turisme de la Generalitat de Catalunya  
Principal Investigator: Xavier Serra  
Duration: 29/12/2000 to 28/12/2001  
Funding: 60.101 €

***The Digital Heritage of Opera in the Open Network Environment (OPENDRAMA)***

Funding agency: EC - IST  
Partners: Space (SPACE) (Coordinator), Teatro del maggio Musicale Fiorentino - Fondazione (COMUNALE), English Opera North (EON), Ministero per i Beni e le Attività Culturali - Discoteca di Stato (DDS), Dynamic S.r.l. (DYNAMIC), Politecnico di Milano - HOC Hypermedia Open Center (POLIMI) The University of Glasgow - Centre for Music Technology (U.GLASGOW), Europe Online S.A. (EOL), System Simulation Ltd. (SSL), Universitat Pompeu Fabra.  
Principal Investigator at UPF: Xavier Serra  
Reference: IST-2000-28197  
Duration: from 01/11/2001 to 31/10/2003  
Funding: 196.782 €

***Transformación de Audio basado en Contenido (TABASCO)***

Funding agency: Ministerio de Ciencia y Tecnología  
Partners: Universitat Pompeu Fabra (Coordinator), IIIA-CSIC  
Principal Investigator: Xavier Serra  
Reference: TIC-2000-1094-C02-01  
Duration: from 01/01/2001 to 31/12/2003  
Funding: 82.639 €

***Music Orchestration Systems in Algorithmic Research and Technology (MOSART)***

Funding agency: EC-Human Potential Programme  
Partners: University of Copenhagen (Coordinator), Norwegian University of Science and Technology, Royal Institute of Technology, University of Aarhus, Danish Technical University, University of Sheffield, University of Nijmegen, Austrian Research Institute for Artificial Intelligence, Università degli Studi di Padova, University of Genova, Centro Nazionale Universitario di Calcolo Elettronico, Centre Nationale de la Recherche

Scientifique, Universitat Pompeu Fabra.  
Principal Investigator at UPF: Xavier Serra  
Reference: HPRN-CT-2000-00115  
Duration: from 01/09/2000 to 31/08/2003  
Funding: 100.198 €

***Content-based Unified Interfaces and Descriptors for Audio & Music (CUIDADO)***

Funding agency: EC-IST  
Partners: IRCAM (Coordinator), Sony CSL, Oracle, CreamWare, Ben Gurion University, Universitat Pompeu Fabra, Artspages International AS.  
Principal Investigator at UPF: Xavier Serra  
Reference: IST-1999-20194  
Duration: from 01/01/2001 to 31/12/2003  
Funding: 394.319 €

***Recognition and Analysis of Audio (RAA)***

Funding agency: EC-IST  
Partners: JOANNEUM RESEARCH (Austria) (Coordinator), HS-ART Digital, Nederlands Omroepproductie Bedrijf, Academy of Athens, Taurus Media Technik, Filmkunst-Musikverlags-und Produktions-gesellschaft, Universitat Pompeu Fabra  
Principal Investigator at UPF: Xavier Serra  
Reference: IST-1999-12585  
Duration: from 01/02/2000 to 31/07/2002  
Funding: 355.478 €

***Content-based Unified Interfaces for Digital Audio/music Description/processing (CUIDAD)***

Funding agency: EC-Esprit  
Partners: IRCAM (Paris) (Coordinator), York Music Technology Group (England), SONY CSL (Paris), SIM (Berlin), INA – GRM (Paris), Nokia Research Center (Finland), Universitat Pompeu Fabra.  
Principal Investigator at UPF: Xavier Serra  
Reference: Esprit-28793  
Duration: 1/09/1998 to 01/03/2000  
Funding: 6.000 €

***First Cost-G6 Workshop on digital audio effects DAFX98***

Funding agency: EC-Cost  
Partners: Universitat Pompeu Fabra  
PI: Xavier Serra  
Duration: 19/11/1998 to 21/11/1998  
Reference: COST-MS-98-2069  
Funding: 11.900 €

***First Cost-G6 Workshop on digital audio effects DAFX98***

Funding agency: Dirección General de Enseñanza Superior  
Partners: Universitat Pompeu Fabra  
Principal Investigator: Xavier Serra  
Reference: CO97-0555  
Duration: 01/01/1998 to 31/12/1998  
Funding: 9.015 €

***Digital Audio Effects, COST-G6***

Funding agency: EC-Cost  
Partners: España, Francia, Alemania, Italia, Irlanda, Gran Bretaña, Suiza, Belgica  
Spanish delegate: Xavier Serra  
Duration: from 01/09/1997 to 31/08/2001



***Audio Morphing***

Funding agency: CIDEM, Generalitat de Catalunya  
Partners: DUY S.A., Universitat Pompeu Fabra (Coordinator)  
Principal Investigator: Xavier Serra  
Duration: from 01/04/1996 to 31/03/1997

***Estudio Integrado***

Funding agency: CIRIT, Generalitat de Catalunya  
Partners: DUY S.A., Universitat Pompeu Fabra (Coordinator)  
Principal Investigator: Xavier Serra  
Duration: from 01/09/1994 to 31/12/1995

**RELEVANT FUNDED INDUSTRIAL PROJECTS**

***Research contract***

Funding company: Heardis!, Germany  
Partners: Universitat Pompeu Fabra  
Principal Investigator: Xavier Serra  
Duration: from 01/12/2020 to 31/09/2021  
Funding: 84.043 €

***Research contract***

Funding company: Trinity College London, UK  
Partners: Universitat Pompeu Fabra  
Principal Investigator: Xavier Serra  
Duration: from 01/04/2020 to 31/03/2021  
Funding: 92.000 €

***Research contract***

Funding company: Kakao, Korea  
Partners: Universitat Pompeu Fabra  
Principal Investigator: Xavier Serra  
Duration: from 13/01/2020 to 12/01/2021  
Funding: 95.000 €

***Research contract***

Funding company: Huawei, Germany  
Partners: Universitat Pompeu Fabra  
Principal Investigator: Xavier Serra  
Duration: from 01/10/2019 to 31/03/2021  
Funding: 217.000 €

***Research contract***

Funding company: Kakao, Korea  
Partners: Universitat Pompeu Fabra  
Principal Investigator: Xavier Serra  
Duration: from 09/01/2019 to 08/01/2020  
Funding: 95.000 €

***Research contract***

Funding company: Flits, Germany  
Partners: Universitat Pompeu Fabra  
Principal Investigator: Xavier Serra  
Duration: from 01/7/2018 to 31/06/2019  
Funding: 100.000 €

***Research contract***

Funding company: Kakao, Korea

Partners: Universitat Pompeu Fabra  
Principal Investigator: Xavier Serra  
Duration: from 09/01/2018 to 08/01/2019  
Funding: 90.000 €

**Research contract**

Funding company: La Cúpula, Spain  
Partners: Universitat Pompeu Fabra  
Principal Investigator: Xavier Serra  
Duration: from 01/05/2018 to 30/04/2019  
Funding: 100.000 €

**Pablo2**

Funding company: Korg, Japan  
Partners: Universitat Pompeu Fabra  
Principal Investigator: Xavier Serra  
Duration: from 01/10/2015 to 31/09/2016  
Funding: 105.000 €

**Good-sounds**

Funding company: Korg, Japan  
Partners: Universitat Pompeu Fabra  
Principal Investigator: Xavier Serra  
Duration: from 01/2/2015 to 31/01/2016  
Funding: 20.000 €

**Pablo2**

Funding company: Korg, Japan  
Partners: Universitat Pompeu Fabra  
Principal Investigator: Xavier Serra  
Duration: from 01/10/2014 to 31/09/2015  
Funding: 100.000 €

**Pablo1**

Funding company: Korg, Japan  
Partners: Universitat Pompeu Fabra  
Principal Investigator: Xavier Serra  
Duration: from 01/10/2013 to 31/09/2014  
Funding: 100.000 €

**ROMA**

Funding company: Yamaha Corporation Japan  
Partners: Universitat Pompeu Fabra  
Principal Investigator: Xavier Serra  
Duration: from 01/04/2013 to 31/03/2014  
Funding: 138.000 €

**Monet**

Funding company: Yamaha Corporation Japan  
Partners: Universitat Pompeu Fabra  
Principal Investigator: Xavier Serra  
Duration: from 06/04/2010 to 30/09/2012  
Funding: 350.000 €

**Vocaloid4**

Funding company: Yamaha Corporation Japan

Partners: Universitat Pompeu Fabra  
Principal Investigator: Xavier Serra  
Duration: from 06/04/2010 to 31/03/2011  
Funding: 118.800 €

***Vocaloid3***

Funding company: Yamaha Corporation Japan  
Partners: Universitat Pompeu Fabra  
Principal Investigator: Xavier Serra  
Duration: from 01/04/2009 to 31/12/2009  
Funding: 132.000 €

***MinusOne***

Funding company: Yamaha Corporation Japan  
Principal Investigator: Xavier Serra  
Duration: from 28/04/2009 to 27/04/2010  
Funding: 112.000 €

***Vocaloid2***

Funding company: Yamaha Corporation Japan  
Partners: Universitat Pompeu Fabra  
Principal Investigator: Xavier Serra  
Duration: from 11/04/2008 to 31/03/2009  
Funding: 132.000 €

***PhononDip***

Funding company: Yamaha Corporation Japan  
Principal Investigator: Xavier Serra  
Duration: from 17/03/2008 to 17/09/2008  
Funding: 66.000 €

***Playable Audio 2***

Funding company: Yamaha Corporation Japan  
Principal Investigator: Xavier Serra  
Duration: from 01/12/2007 to 31/03/2008  
Funding: 27.395 €

***Playable Audio 1***

Funding company: Yamaha Corporation Japan  
Principal Investigator: Xavier Serra  
Duration: from 26/09/2006 to 25/09/2007  
Funding: 150.300 €

***Violin Performer 2: Improving the algorithm of "Performance Modeling" for professional quality violin synthesis***

Funding company: Yamaha Corporation Japan  
Principal Investigator: Xavier Serra  
Duration: from 01/2007 to 01/10/2008  
Funding: 106.843 €

***Violin Performer 1: Improving the algorithm of "Performance Modeling" for professional quality violin synthesis***

Funding company: Yamaha Corporation Japan  
Principal Investigator: Xavier Serra  
Duration: from 26/09/2006 to 25/09/2007

Funding: 84.537 €

***Daisy 4***

Funding company: Yamaha Corporation Japan

Principal Investigator: Xavier Serra

Duration: from 01/03/2004 to 31/08/2005

Funding: 161.020 €

***ESPR-ESSO***

Funding company: Yamaha Corporation Japan

Principal Investigator: Xavier Serra

Duration: from 01/10/2003 to 28/02/2005

Funding: 232.363 €

***Análisis y Identificación de Audio (AIDA)***

Funding company: Sociedad Digital de Autores y Editores (SDAE)

Principal Investigator: Xavier Serra

Duration: from 01/07/2001 to 31/06/2004

Funding: 706.294 €

***Daisy 2: Research in the area of digital sound processing and application software development technologies***

Funding company: Yamaha Corporation Japan

Principal Investigator: Xavier Serra

Duration: 04/03/2001 to 04/03/2002

Funding: 377.779 €

***Daisy 1: develop and establish a synthesis technology for vocal sound***

Funding company: Yamaha Corporation Japan

Principal Investigator: Xavier Serra

Duration: 04/03/2000 to 04/03/2001

Funding: 221.834 €

***Elvis: develop and establish a morphing technology for singer's voice***

Funding company: Yamaha Corporation Japan

Principal Investigator: Xavier Serra

Duration: 04/11/1997 to 10/03/2000

Funding: 334.075 €

**SUPERVISED PHD THESIS**

Title: 'Deep Neural Networks for Music and Audio Tagging'

Student: Jordi Pons

University: Universitat Pompeu Fabra

Department: Department in Information and Communication Technologies

Date: November 2019

Title: 'The musical dimension of Chinese traditional theatre: An analysis from computer aided musicology'

Student: Rafael Caro Repetto

University: Universitat Pompeu Fabra

Department: Department d'Humanitats

Date: December 2018

Title: 'MIRages: an account of music audio extractors, semantic description and context-awareness, in the three ages of MIR'

Student: Perfecto Herrera Boyer

University: Universitat Pompeu Fabra

Department: Department in Information and Communication Technologies  
Date: December 2018

Title: ‘Automatic assessment of singing voice pronunciation: a case study with jingju music’  
Student: Rong Gong  
University: Universitat Pompeu Fabra  
Department: Department in Information and Communication Technologies  
Date: December 2018

Title: ‘Knowledge Extraction and Representation Learning for Music Recommendation and Classification’  
Student: Sergio Oramas  
University: Universitat Pompeu Fabra  
Department: Department in Information and Communication Technologies  
Date: December 2017

Title: ‘Knowledge-based Probabilistic Modeling for Tracking Lyrics in Music Audio Signals’  
Student: Georgi Dzhambazov  
University: Universitat Pompeu Fabra  
Department: Department in Information and Communication Technologies  
Date: December 2016

Title: ‘Computational Analysis of Audio Recordings and Music Scores for the Description and Discovery of Ottoman-Turkish Makam Music’  
Student: Sertan Sentürk  
University: Universitat Pompeu Fabra  
Department: Department in Information and Communication Technologies  
Date: December 2016

Title: ‘Towards a multimodal knowledge base for Indian art music: A case study with melodic intonation’  
Student: Gopala Krishna Koduri  
University: Universitat Pompeu Fabra  
Department: Department in Information and Communication Technologies  
Date: December 2016

Title: ‘A Data-driven Bayesian Approach to Automatic Rhythm Analysis of Indian Art Music’  
Student: Ajay Srinivasamurthy  
University: Universitat Pompeu Fabra  
Department: Department in Information and Communication Technologies  
Date: October 2016

Title: ‘Computational Approaches for Melodic Description in Indian Art Music Corpora’  
Student: Sankalp Gulati  
University: Universitat Pompeu Fabra  
Department: Department in Information and Communication Technologies  
Date: October 2016

Title: ‘Descriptor Control of Sound Transformations and Mosaicing Synthesis’  
Student: Graham Coleman  
University: Universitat Pompeu Fabra  
Department: Department in Information and Communication Technologies  
Date: February 2016

Title: ‘Expression Control of Singing Voice Synthesis: Modeling Pitch and Dynamics with Unit Selection and Statistical Approaches’  
Student: Martí Umbert  
University: Universitat Pompeu Fabra  
Department: Department in Information and Communication Technologies

Date: January 2016

Title: 'Tag Recommendation using Folksonomy Information for Online Sharing Platforms'

Student: Frederic Font Corbera

University: Universitat Pompeu Fabra

Department: Department in Information and Communication Technologies

Date: 11/06/2015

Title: 'Algorithms and representations for supporting online music creation with large-scale audio databases'

Student: Gerard Roma Trepal

University: Universitat Pompeu Fabra

Department: Department in Information and Communication Technologies

Date: 5/6/2015

Title: 'Statistical modelling and resynthesis of environmental texture sounds'

Student: Stefan Kersten

University: Universitat Pompeu Fabra

Department: Department in Information and Communication Technologies

Date: 5/6/2015

Title: 'Computational Analysis of Expressivity in Classical Guitar Performances'

Student: Tan Özaslan

University: Universitat Pompeu Fabra

Department: Department in Information and Communication Technologies

Date: 11/29/2013

Title: 'Statistical Distribution of Common Audio Features'

Student: Martin Haro

University: Universitat Pompeu Fabra

Department: Department in Information and Communication Technologies

Date: 22/11/2013

Title: 'Melody Extraction from Polyphonic Music Signals'

Student: Justin Salamon

University: Universitat Pompeu Fabra

Department: Department in Information and Communication Technologies

Date: September 2013

Title: 'Non-stationary sinusoidal analysis'

Student: Saso Musevic

University: Universitat Pompeu Fabra

Department: Department in Information and Communication Technologies

Date: 10/09/2013

Title: 'Audio Source Separation for Music in Low-latency and High-latency Scenarios'

Student: Ricard Marxer

University: Universitat Pompeu Fabra

Department: Department in Information and Communication Technologies

Date: 9/09/2013

Title: 'From music similarity to music recommendation: Computational approaches based on audio and metadata analysis'

Student: Dmitry Bogdanov

University: Universitat Pompeu Fabra

Department: Department in Information and Communication Technologies

Date: September 2013

Title: 'Exploring interactions between music and language during the early development of music cognition. A computational modelling approach'

Student: Ines Salselas

University: Universitat Pompeu Fabra

Department: Department in Information and Communication Technologies

Date: 26/04/2013

Title: 'Automatic Musical Instrument Recognition from Polyphonic Music Audio Signals'

Student: Ferdinand Fuhrmann

University: Universitat Pompeu Fabra

Department: Department in Information and Communication Technologies

Date: 25/04/2012

Title: 'Semantic Annotation of Music Collections: A Computational Approach'

Student: Mohamed Sordo

University: Universitat Pompeu Fabra

Department: Department in Information and Communication Technologies

Date: 27/02/2012

Title: 'Automatic Classification of Musical Mood by Content Based Analysis'

Student: Cyril Laurier

University: Universitat Pompeu Fabra

Department: Department in Information and Communication Technologies

Date: 19/10/2011

Title: 'Identification of Versions of the Same Musical Composition by Processing Audio Descriptions'

Student: Joan Serra

University: Universitat Pompeu Fabra

Department: Department in Information and Communication Technologies

Date: 23/03/2011

Title: 'Musical expectation modelling from audio: a causal mid-level approach to predictive representation and learning of spectro-temporal events'

Student: Amaury Hazan

University: Universitat Pompeu Fabra

Department: Department in Information and Communication Technologies

Date: 16/07/2010

Title: 'Enhancing Spectral Synthesis Techniques with Performance Gestures using the Violin as a Case Study'

Student: Alfonso Perez

University: Universitat Pompeu Fabra

Department: Department in Information and Communication Technologies

Date: 13/11/2009

Title: 'Modeling instrumental gestures: an analysis/synthesis framework for violin bowing'

Student: Esteban Maestre

University: Universitat Pompeu Fabra

Department: Department in Information and Communication Technologies

Date: 12/11/2009

Title: 'Audio content processing for automatic music genre classification: descriptors, databases, and classifiers'

Student: Enric Guaus

University: Universitat Pompeu Fabra

Department: Department in Information and Communication Technologies

Date: 21/09/2009

Title: 'Voice Processing and Synthesis by Performance Sampling and Spectral Models'

Student: Jordi Bonada

University: Universitat Pompeu Fabra

Department: Department in Information and Communication Technologies

Date: December 2008

Title: 'Music Recommendation and Discovery in the Long Tail'

Student: Oscar Celma

University: Universitat Pompeu Fabra

Department: Department in Information and Communication Technologies

Date: December 2008

Title: 'Singing-Driven Interfaces for Sound Synthesizers'

Student: Jordi Janer

University: Universitat Pompeu Fabra

Department: Department in Information and Communication Technologies

Date: 14/03/2008

Title: 'Music Complexity: a multi-faceted description of audio content'

Student: Sebastian Streich

University: Universitat Pompeu Fabra

Department: Department in Information and Communication Technologies

Date: 21/02/2007

Title: 'Structural Analysis and Segmentation of Music Signals'

Student: Bee Suan Ong

University: Universitat Pompeu Fabra

Department: Department in Information and Communication Technologies

Date: 21/02/2007

Title: 'Content-Based Audio Search from Fingerprinting to Semantic Audio Retrieval'

Student: Pedro Cano

University: Universitat Pompeu Fabra

Department: Department in Information and Communication Technologies

Date: 27/04/2007

Title: 'Spectral Processing of The Singing Voice'

Student: Alex Loscos

University: Universitat Pompeu Fabra

Department: Department in Information and Communication Technologies

Date: 02/05/2007

Title: 'Tonal Description of music audio signals'

Student: Emilia Gomez

University: Universitat Pompeu Fabra

Department: Department in Information and Communication Technologies

Date: 25/07/2006

Title: 'Computer Supported Cooperative Work for Music Applications'

Student: Alvaro Barbosa

University: Universitat Pompeu Fabra

Department: Department in Information and Communication Technologies

Date: 03/07/2006



Title: 'A computational approach to rhythm description --- Audio features for the computation of rhythm periodicity functions and their use in tempo induction and music content processing'

Student: Fabien Gouyon

University: Universitat Pompeu Fabra

Department: Department in Information and Communication Technologies

Date: 30/11/2005

Title: 'Digital Lutherie: Crafting musical computers for new musics' performance and improvisation'

Student: Sergi Jordà

University: Universitat Pompeu Fabra

Department: Department in Information and Communication Technologies

Date: 21/06/2005

Title: 'An Object-Oriented Metamodel for Digital Signal Processing with a focus on Audio and Music'

Student: Xavier Amatriain

University: Universitat Pompeu Fabra

Department: Department in Information and Communication Technologies

Date: 27/01/2005

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- Ferraro A, Oramas S, Quadrana M, Serra X. Maximizing the Engagement: Exploring New Signals of Implicit Feedback in Music Recommendations. In: Santos R, Marinho L. Proceedings 14th ACM Conference on Recommender Systems (on line). 1 ed. Rio de Janeiro: Association for Computing Machinery; 2020. p. 1-6.
- Ferraro A, Bogdanov D, Serra X, Jeon JH, Yoon J. How Low Can You Go? Reducing Frequency and Time Resolution in Current CNN Architectures for Music Auto-tagging. In: Heusdens R, Richard C. Proceedings 28th European Signal Processing Conference (EUSIPCO 2020). 1 ed. Amsterdam: European Association for Signal Processing (EURASIP); 2020. p. 131-135.
- Ramires A, Chandna P, Favory X, Gómez E, Serra X. Neural Percussive Synthesis Parameterised by High-Level Timbral Features. In: AA. VV.. Proceedings ICASSP 2020 - IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP). 1 ed. Barcelona: IEEE; 2020. p. 786-790.
- Won M, Chun S, Nieto O, Serra X. Data-Driven Harmonic Filters for Audio Representation Learning. In: AA. VV.. Proceedings ICASSP 2020 - IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP). 1 ed. Barcelona: IEEE; 2020. p. 536-540.
- Alonso-Jiménez P, Bogdanov D, Pons J, Serra X. TensorFlow Audio Models in Essentia. In: AA. VV.. Proceedings ICASSP 2020 - IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP). 1 ed. Barcelona: IEEE; 2020. p. 266-270.
- Alonso-Jiménez P, Bogdanov D, Serra X. Deep embeddings with Essentia models. In: AA. VV.. Proceedings International Society of Music Information Retrieval Conference (ISMIR 2020). 1 ed. Montréal: ISMIR; 2020.
- Eremenko V, Morsi, A, Narang J, Serra X. Performance assessment technologies for the support of musical instrument learning. In: AA. VV.. Proceedings of the 12th International Conference on Computer Supported Education. 1 ed. DBLP Thomsom Reuters; 2020. p. 629-640.
- Favory X, Font F, Serra X. Search Result Clustering in Collaborative Sound Collections. In: AA. VV.. Proceedings of the 2020 International Conference on Multimedia Retrieval (ICMR 20). 1 ed. Dublin: 2020. p. 1-8.
- Correya A, Bogdanov D, Jjoglar-Ongay L, Serra X. Essentia.js: a JavaScript library for music and audio analysis on the web. In: Laplante A, Fujinaga I. Proceedings of the 21st International Society for Music Information Retrieval Conference (ISMIR). 1 ed. Montreal: International Society for Music Information Retrieval (ISMIR); 2020. p. 605-612.
- Ramires A, Font F, Bogdanov D, Smith JBL, Yang Y, Ching J, Chen B, Wu Y, Wei-Han H, Serra X. The Freesound Loop dataset and annotation tool. In: AA. VV.. Proceedings of the 21th International Society for Music Information Retrieval Conference, ISMIR 2020. 1 ed. Montreal: ISMIR; 2020. p. 287-294.
- Ramires A, Bernardes G, Davies MEP, Serra X. TIV.lib: an open-source library for the tonal description of musical audio open-source library for the tonal description of musical audio. In: Gianpaolo Evangelista. Proceedings of the 23rd International Conference on Digital Audio Effects. 1 ed. 2020. p. 304-309.

- Ferraro, A.; Jeon, JH; Kim, B.; Serra, X.; Bogdanov, D.. Artist biases in collaborative filtering for music recommendation. In: ICML. Proceedings of the 37 th International Conference on Machine Learning. 1 ed. 2020.
- Tovstogan, P.; Serra, X.; Bogdanov, D.. Web interface for exploration of latent and tag spaces in music auto-tagging. In: ICML. Proceedings of the 37 th International Conference on Machine Learning. 1 ed. 2020.
- Zinemanas P, Hounie I, Cancela P, Font F, Rocamora M, Serra X. DCASE-models: a phyton library for computational environmental sound analysis using deep-learning models. In: Ono N, Harada N, Kawaguchi Y, Mesaros A, Imoto K, Koizumi Y, Komatsu T (eds.). Proceedings of the Fifth Workshop on Detection and Classification of Acoustic Scenes and Events (DCASE 2020). 1 ed. Tokio: Zenodo; 2020. p. 240-244.
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- Pons J, Serra X. Designing Efficient Architectures for Modeling Temporal Features with Convolutional Neural Networks. In: VV.AA.. *42th International Conference on Acoustics, Speech, and Signal Processing (ICASSP 2017) Proceedings*. 1 ed. 2017. p. 2472-2476.
- Caro Repetto, Rafael; Zhang, Shuo; Serra, Xavier. Quantitative analysis of the relationship between linguistic tones and melody in jingju using music scores. In: AA.VV.. *4th International Workshop on Digital Libraries for Musicology*. 1 ed. ACM; 2017. p. 41-44.
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Serra, Xavier. A Computer Model for Bar Percussion Instruments. In: -. Proceedings of the International Computer Music Conference. 1 ed. 1986. p. 257-262.

## **PATENTS**

Inventors: Tokuda, H.; Hariya, W.; Oishi, K.; Parra, H.; Dabiri, D.; Serra, X.

Title: Musical tone evaluation device and program

Application number: JP2014-216990

Priority country: Japan

Priority date: 24/10/2014

Assignee: Korg

Companies exploiting it: Korg

Inventors: Yasuo Yoshioka, Hamamatsu (JP); Hiraku Kayama, Hamamatsu (JP); Xavier Serra, Barcelona (ES); Jordi Bonada, Barcelona (ES)

Title: Voice Converter with Extraction and Modification of Attribute Data

United States Patent number: US 7,149,682 B2

Date of Patent: Dec. 12, 2006

Filed: Oct. 29, 2002

Assignee: Yamaha Corporation (Hamamatsu, JP); Pompeu Fabra University (Barcelona, ES)

Companies exploiting it: Yamaha Corporation

Inventors: Hideki Kenmochi, Shimizu (JP); Xavier Serra, Barcelona (ES); Jordi Bonada, Barcelona (ES)

Title: Singing Voice Synthesizing Apparatus, Singing Voice Synthesizing Method, and Program for Realizing Singing Voice Synthesizing Method

United States Patent number: US 7,016,841 B2

Date of Patent: Mar. 21, 2006

Filed: Dec. 27, 2001

Assignee: Yamaha Corporation (Hamamatsu, JP)

Companies exploiting it: Yamaha Corporation

Inventors: Kawashima; Takahiro (Hamamatsu, JP), Yoshioka; Yasuo (Hamamatsu, JP), Cano; Pedro (Barcelona, ES), Loscos; Alex (Barcelona, ES), Serra; Xavier (Barcelona, ES), Schiementz; Mark (Barcelona, ES), Bonada; Jordi (Barcelona, ES)

Title: Voice converter for assimilation by frame synthesis with temporal alignment

United States Patent number: US 6,836,761 B1

Date of Patent: Dec. 28, 2004

Filed: October 20, 2000

Assignee: Yamaha Corporation (Hamamatsu, JP); Pompeu Fabra University (Barcelona, ES)

Companies exploiting it: Yamaha Corporation

Inventors: Yasuo Yoshioka, Hamamatsu (JP); Xavier Serra, Barcelona (ES)

Title: Converting Apparatus of Voice Signal by Modulation of Frequencies and Amplitudes of Sinusoidal Wave Components

United States Patent number: US 7,117,154 B2

Date of Patent: Oct. 3, 2006

Filed: Oct. 27, 1998

Assignee: Yamaha Corporation (Hamamatsu, JP); Pompeu Fabra University (Barcelona, ES)

Companies exploiting it: Yamaha Corporation

Inventors: Xavier Serra, Barcelona, Spain; Chris Williams, San Rafael, Calif.; Robert Gross, Raleigh, N.C.; Erling Wold, El Cerrito, Calif.

Title: Method of an Apparatus for Analyzing and Synthesizing a Sound by Extracting and Controlling a Sound Parameter

United States Patent number: 5.536.902

Date of Patent: Jul. 16, 1996

Filed: Apr. 14, 1993

Assignee: Yamaha Corporation, Japan

Countries extended to: Europe, Asia

Companies exploiting it: Yamaha Corporation

Inventors: Xavier Serra; Julius O. Smith

Title: Musical Synthesizer Combining Deterministic and Stochastic Waveforms

United States Patent number: 5.029.509

Date of Patent: Jul. 9, 1991

Filed: Nov. 3, 1989

Assignee: Stanford University, Stanford, Calif.

Countries extended to: Europe, Asia

Companies exploiting it: Yamaha Corporation