

# Sertan Şentürk

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## Objective

I pursue a career in music technology, and specialize in music information retrieval, audio signal processing, machine learning and music perception & cognition. As a part of my endeavors, I develop novel methodologies and interfaces to explore new modes of musical understanding, creativity, expressivity and interaction.

## Research Interests

- Music Information Retrieval, Audio Signal Processing & Machine Learning
  - Automatic description and summarization of musical data
  - Music discovery
  - Audio-score alignment
  - Predictive music modeling
  - Mode recognition and tonic identification
- Interactive Music
  - Novel instrument and interface design
- Reproducible Research

## Education

- **Universitat Pompeu Fabra** Sep 2011 – Dec 2016  
*PhD in Information, Communication and Audiovisual Technologies*  
Barcelona, SPAIN
  - Researcher in *CompMusic Project*
  - Teaching assistant in Signals & Systems (MTC.21409)
- **Georgia Institute of Technology (Georgia Tech)** Aug 2009 – Dec 2011  
*MSc. in Music Technology; GPA: 3.64/4.00*  
Atlanta, GA, USA
  - Graduate Research Assistant in *Music Intelligence Group*
  - **Key Courses:** Computational Music and Audio Analysis, Digital Signal Processing - Music, Music Technology Research Lab, Interactive Music, Music Perception & Cognition, Sensation & Perception, Technology Ensemble, Project Studio - Music Technology, Computer Music Composition, Music Technology History & Repertoire, Network Music, Music Recording & Mixing
- **Middle East Technical University (METU)** Sep 2004 – Jun 2009  
*BSc. in Electrical And Electronics Engineering; GPA: 3.13/4.00*  
Ankara, TURKEY
  - Honor Student
  - Graduated from Control Engineering Option
  - **Key Courses:** Digital Signal Processing, Discrete Time Systems, Signals and Systems I-II, Probability and Random Variables, Feedback Systems, Computational Methods in Electrical Engineering, Data Structures, Introduction to Microprocessors, Digital Electronics, Introduction to Logic Design, Analog Electronics, Engineering Design I-II
- **Hacettepe University Ankara State Conservatory** Sep 2005 – Jun 2009  
*Certificate of Achievement in Classical Guitar; GPA: 87.75/100*  
Ankara, TURKEY
  - Four-year, part-time program
  - Courses: Classical Guitar, Solfège & Music Theory

## Work & Research Experience

- **Universitat Pompeu Fabra, Music Technology Group** Sep 2011 – Ongoing  
*Researcher in CompMusic Project, advisor Prof. Xavier Serra*  
Barcelona, SPAIN
  - Computational Analysis of Audio Recordings and Music Scores for the Description and Discovery of Ottoman-Turkish Makam Music
  - Dunya
  - Joint Tonic Identification and Mode Recognition
- **Georgia Tech Center for Music Technology** Aug 2009 – Aug 2011  
*Graduate Research Assistant for Prof. Parag Chordia*  
Atlanta, GA, USA
  - Predictive Music Modeling
  - Joint Tonic Identification and Mode Recognition
- **METU Department of Electrical and Electronics Engineering** Sep 2008 – Jun 2009  
*Undergraduate Researcher for Prof. Tolga Çiloğlu*  
Ankara, TURKEY
  - Incorporation of Visual Information in Automatic Speech Segmentation
- **METU Department of Mechanical Engineering** Oct 2007 – Jun 2008  
*Undergraduate Researcher for Prof. Filiz Bal Koçyiğit*  
Ankara, TURKEY
  - Sound and Noise Control in Hospitals
  - Acoustics in the Partial Deaf Student School Music Classrooms
  - Predicting the Acoustics of Historic Istanbul Tunnel
- **Arçelik A.Ş. Vibration and Acoustics Laboratory** Jun 2007 – Jul 2007  
*Intern*  
Istanbul, TURKEY
  - Active Noise Control

## Skills

**Programming Languages:** Python, MATLAB Scripting, C/C++, R, Java, Shell Scripting

**Software:** MATLAB, Simulink, Xcode, Weka, Eclipse

Max/MSP, PD-extended, Pro Tools, Finale, Mus2, Humdrum

Wordpress, Inkscape, L<sup>A</sup>T<sub>E</sub>X

**Programming skills:** object oriented programming, version control, unit testing, code coverage, continous integration, semantic versioning

**Frameworks:** FMOD, openframeworks, ReacTIVision

**Operating Systems:** Ubuntu, Ubuntu Studio, Debian, Mac OS X, Windows 7, Windows XP

**Languages:** Turkish (native), English (fluent), Spanish (upper-intermediate), German (pre-intermediate)

**Musical:** Classical guitar, fretless guitar, Western classical music theory and analysis

**Technical:** Sound equipment set-up and usage; electronic circuit design, test and implementation

## Publications

- [1] Sertan Şentürk. *Computational Analysis of Audio Recordings and Music Scores for the Description and Discovery of Ottoman-Turkish Makam Music*. PhD thesis, Universitat Pompeu Fabra, Barcelona, Spain, December 2016.
- [2] Georgi Dzhambazov, Ajay Srinivasamurthy, Sertan Şentürk, and Xavier Serra. On the use of note onsets for improved lyrics-to-audio alignment in Turkish makam music. In *Proceedings of 17th International Society for Music Information Retrieval Conference (ISMIR 2016)*, pages 716–722, New York, NY, USA, 2016.
- [3] Sankalp Gulati, Joan Serrà, Kaustuv K. Ganguli, Sertan Şentürk, and Xavier Serra. Time-delayed melody surfaces for rāga recognition. In *Proceedings of 17th International Society for Music Information Retrieval Conference (ISMIR 2016)*, pages 751–757, New York, NY, USA, 2016.
- [4] Sankalp Gulati, Joan Serrà, Vignesh Ishwar, Sertan Şentürk, and Xavier Serra. Phrase-based rāga recognition using vector space modeling. In *Proceedings of 41st IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP 2016)*, pages 66–70, Shanghai, China, 2016. IEEE, IEEE.
- [5] Altuğ Karakurt, Sertan Şentürk, and Xavier Serra. MORTY: A toolbox for mode recognition and tonic identification. In *Proceedings of the 3rd International Digital Libraries for Musicology Workshop (DLfM 2016)*, pages 9–16, New York, NY, USA, 2016. ACM.
- [6] Sertan Şentürk, Gopala Krishna Koduri, and Xavier Serra. A score-informed computational description of svaras using a statistical model. In *Proceedings of 13th Sound and Music Computing Conference (SMC 2016)*, pages 427–433, Hamburg, Germany, 2016. Zentrum für Mikrotonale Musik und Multimediale Komposition (ZM4) Hochschule für Musik und Theater.
- [7] Sertan Şentürk and Xavier Serra. Composition identification in Ottoman-Turkish makam music using transposition-invariant partial audio-score alignment. In *Proceedings of 13th Sound and Music Computing Conference (SMC 2016)*, pages 434–441, Hamburg, Germany, 2016. Zentrum für Mikrotonale Musik und Multimediale Komposition (ZM4) Hochschule für Musik und Theater.
- [8] Sertan Şentürk and Xavier Serra. A method for structural analysis of Ottoman-Turkish makam music scores. In *Proceedings of 6th International Workshop on Folk Music Analysis (FMA 2016)*, pages 39–46, Dublin, Ireland, 2016. Dublin Institute of Technology.
- [9] Bilge Miraç Atıcı, Barış Bozkurt, and Sertan Şentürk. A culture-specific analysis software for makam music traditions. In *Proceedings of 5th International Workshop on Folk Music Analysis (FMA 2015)*, pages 88–92, Paris, France, 2015. University Pierre et Marie Curie.
- [10] Hasan Sercan Atlı, Barış Bozkurt, and Sertan Şentürk. A method for tonic frequency identification of Turkish makam music recordings. In *Proceedings of 5th International Workshop on Folk Music Analysis (FMA 2015)*, pages 119–122, Paris, France, 2015. University Pierre et Marie Curie.
- [11] Georgi Dzhambazov, Sertan Şentürk, and Xavier Serra. Searching lyrical phrases in a-capella Turkish makam recordings. In Meinard Müller and Frans Wiering, editors, *Proceedings of 16th International Society for Music Information Retrieval Conference (ISMIR 2015)*, pages 687–693, Málaga, Spain, 2015.
- [12] André Holzapfel, Umut Şimşekli, Sertan Şentürk, and Ali Taylan Cemgil. Section-level modeling of musical audio for linking performances to scores in Turkish makam music. In *Proceedings of 40th IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP 2015)*, pages 141–145, Brisbane, Australia, 2015. IEEE.

- [13] Sertan Şentürk, Andrés Ferraro, Alastair Porter, and Xavier Serra. A tool for the analysis and discovery of Ottoman-Turkish makam music. In Meinard Müller and Frans Wiering, editors, *Extended Abstracts for the Late Breaking Demo Session of the 16th International Society for Music Information Retrieval Conference (ISMIR 2015)*, Málaga, Spain, 2015.
- [14] Hasan Sercan Atlı, Burak Uyar, Sertan Şentürk, Barış Bozkurt, and Xavier Serra. Audio feature extraction for exploring Turkish makam music. In *Proceedings of 3rd International Conference on Audio Technologies for Music and Media (ATMM 2014)*, Ankara, Turkey, 2014. Bilkent University, Bilkent University.
- [15] Georgi Dzhambazov, Sertan Şentürk, and Xavier Serra. Automatic lyrics-to-audio alignment in classical Turkish music. In André Holzapfel, editor, *Proceedings of 4th International Workshop on Folk Music Analysis (FMA 2014)*, pages 61–64, Istanbul, Turkey, 2014. Computer Engineering Department, Boğaziçi University.
- [16] Sertan Şentürk, Sankalp Gulati, and Xavier Serra. Towards alignment of score and audio recordings of Ottoman-Turkish makam music. In André Holzapfel, editor, *Proceedings of 4th International Workshop on Folk Music Analysis (FMA 2014)*, pages 57–60, Istanbul, Turkey, 2014. Computer Engineering Department, Boğaziçi University.
- [17] Sertan Şentürk, André Holzapfel, and Xavier Serra. Linking scores and audio recordings in makam music of Turkey. *Journal of New Music Research*, 43(1):34–52, 2014.
- [18] Burak Uyar, Hasan Sercan Atlı, Sertan Şentürk, Barış Bozkurt, and Xavier Serra. A corpus for computational research of Turkish makam music. In *Proceedings of the 1st International Digital Libraries for Musicology Workshop (DLfM 2014)*, pages 57–63, London, United Kingdom, 2014.
- [19] Parag Chordia and Sertan Şentürk. Joint recognition of raag and tonic in north Indian music. *Computer Music Journal*, 37(3):82–98, 2013.
- [20] Sertan Şentürk. Sesin özgürleşmesi: Müzik prodüksiyonu teknolojileri. *Birikim Dergisi*, 285:98–104, 2013.
- [21] Sertan Şentürk, Sankalp Gulati, and Xavier Serra. Score informed tonic identification for makam music of Turkey. In Alceu de Souza Britto Jr., Fabien Gouyon, and Simon Dixon, editors, *Proceedings of 14th International Society for Music Information Retrieval Conference (ISMIR 2013)*, pages 175–180, Curitiba, Brazil, 2013. Pontifícia Universidade Católica do Paraná.
- [22] Sertan Şentürk, André Holzapfel, and Xavier Serra. An approach for linking score and audio recordings in makam music of Turkey. In Xavier Serra, Preeti Rao, Hema Murty, and Barış Bozkurt, editors, *Proceedings of 2nd CompMusic Workshop*, pages 95–106, Istanbul, Turkey, 2012. Universitat Pompeu Fabra.
- [23] Sertan Şentürk, Sang Won Lee, Avinash Sastry, Anosh Daruwalla, and Gil Weinberg. Crossole: A gestural interface for composition, improvisation and performance using Kinect. In Georg Essl, Brent Gillespie, Michael Gurevich, and S O’Modhrain, editors, *Proceedings of International Conference on New Interfaces for Musical Expression (NIME 2012)*, pages 449–502, Ann Arbor, MI, USA, 2012. University of Michigan, University of Michigan.
- [24] Mohamed Sordo, Gopala Krishna Koduri, Sertan Şentürk, Sankalp Gulati, and Xavier Serra. A musically aware system for browsing and interacting with audio music collections. In Xavier Serra, Preeti Rao, Hema Murty, and Barış Bozkurt, editors, *Proceedings of 2nd CompMusic Workshop*, pages 20–24, Istanbul, Turkey, 2012. Universitat Pompeu Fabra.
- [25] Aaron Albin, Sertan Şentürk, Akito Van Troyer, Brian Blosser, Oliver Jan, and Gil Weinberg. Beatscape, a mixed virtual-physical environment for musical ensembles. In Alexander Refsum

Jensenius, Anders Tveit, Rolf Inge Godøy, and Dan Overholt, editors, *Proceedings of International Conference on New Interfaces for Musical Expression (NIME 2011)*, pages 112–115, Oslo, Norway, 2011. University of Oslo and Norwegian Academy of Music.

- [26] Parag Chordia, Avinash Sastry, and Sertan Şentürk. Predictive tabla modelling using variable-length Markov and hidden Markov models. *Journal of New Music Research*, 40(2):105–118, 2011.
- [27] Sertan Şentürk. Computational modeling of improvisation in Turkish folk music using variable-length Markov models. Master’s thesis, Georgia Institute of Technology, Atlanta, 2011.
- [28] Sertan Şentürk. Interactivity in contemporary dance and music. Self Published, 2011.
- [29] Sertan Şentürk and Parag Chordia. Modeling melodic improvisation in Turkish folk music using variable-length Markov models. In *Proceedings of 12th International Society for Music Information Retrieval Conference (ISMIR 2011)*, pages 269–274, Miami, FL, USA, 2011.
- [30] Filiz Bal Kocyyigit and Sertan Şentürk. Acoustics in the partial deaf student school music classrooms. In *Proceedings of Acoustics’08 Paris Conference*, pages 3919–3924, Paris, France, 2008. Société Française d’Acoustique.

## Selected Projects

- **Computational Analysis of Ottoman-Turkish Makam Music** 2011 – 2016  
*Doctorate Research* *Universitat Pompeu Fabra*
  - Methodologies designed to analyze the audio recordings and music scores of Ottoman-Turkish makam music for automatic description and music discovery
  - Open source toolbox is available at <https://github.com/sertansenturk/tomato>.
  - Related papers: [1, 5, 6, 7, 8, 10, 12, 13, 14, 16, 17, 21, 18, 22, 24] in **Publications**
  - Funded by the European Research Council under the European Union Seventh Framework Program (FP7/2007-2013) / ERC grant agreement 267583.
  - Responsibilities: Set music score and audio corpora, propose culture-aware methodologies to analyse the melodic, structural, rhythmic and lyrics content of the music scores and audio recordings, implement the algorithms in a modular and easy-to-use toolbox
- **Automatic Music Description and Discovery** 2011 – 2017  
*Doctorate Research* *Universitat Pompeu Fabra*
  - Creation of representative music corpora and development of relevant software tools for corpus-based automatic music description and discovery
  - The web application may be visited at <http://dunya.compmusic.upf.edu/makam/>.
  - Related papers: [13, 14, 18, 24] in **Publications**
  - Funded by the European Research Council under the European Union Seventh Framework Program (FP7/2007-2013) / ERC grant agreement 267583.
  - Responsibilities: Set up the CompMusic makam music corpora, deploy the implementations of the automatic analysis methodologies, assist in developing the culture-specific user interaction
- **Audio-Score Alignment** 2012 –  
*Doctorate Research* *Universitat Pompeu Fabra*
  - Audio-score alignment methodologies designed to handle culture-specific characteristics of the studied musics
  - Related papers: [1, 6, 7, 12, 13, 14, 16, 17, 18, 21, 22] in **Publications**
  - Funded by the European Research Council under the European Union Seventh Framework Program (FP7/2007-2013) / ERC grant agreement 267583.
  - Responsibilities: Set up and annotate the score-audio test datasets, develop section-level and note-level alignment methodologies robust to changes in structure, transposition, tuning and intonation
- **Predictive Music Modeling** 2011 – 2013  
*Graduate Assistantship Research, Masters Thesis* *Georgia Tech*
  - Computational modeling of *uzun hava*, a non-metered improvisational melodic structure in Turkish folk music
  - Computational modeling of tabla (a sophisticated North Indian percussion) performances with Avinash Sastry

- Related papers: [26, 27, 29] in **Publications**
- Responsibilities: Creating datasets from symbolic notations, automatic segmentation, feature extraction, class conditional probability calculation and classification by naive multivariate Gaussian distributions, multiple viewpoints modeling

## • **Joint Mode Recognition and Tonic Identification** 2010, 2016

*Doctorate and Masters Research* *Georgia Tech, Universitat Pompeu Fabra*

- Realised a state-of-art system that is able to recognise tonic and mode of Ottoman-Turkish makam, Hindustani and Carnatic music recordings jointly from pitch distributions in a fully automatic way and with very high precision
- An open source toolbox is available <https://github.com/altugkarakurt/morty>.
- Related papers: [5, 19] in **Publications**
- Funded by NSF CreativeIT Grant, Award #0855758 and by the European Research Council under the European Union Seventh Framework Program (FP7/2007-2013), ERC grant agreement 267583
- Responsibilities: Pitch tracking in **GTRaagDB**, pitch distribution calculations, tonic candidate selection algorithms, joint tonic and raag recognition using different parametric and non-parametric methods

## • **Crossole** 2011

*A Musical Interface Designed in the Course, Project Studio* *Georgia Tech*

- A musical interface by which humans and possibly the machine itself performs a musical structure by creating and controlling musical progressions in real time in a virtual environment with hand gestures.
- Related papers: [23] in **Publications**
- Performed at the Atlanta Maker Faire 2011; 10 September 2011; Atlanta, GA, USA and the [Listening Machines 2011](#); April 2011; Atlanta, GA, USA
- Finalist in the Innovation Competition of GTRIC 2012
- Responsibilities: Audio framework and software development in C++

## • **Ottoman-Turkish Makam Music Ontologies** 2015 – 2017

*Doctorate Research* *Universitat Pompeu Fabra*

- Ontologies describing the concepts in Ottoman-Turkish makam music from music scores to melodic structures and performance interactions
- The ontologies are available at <https://github.com/sertansenturk/makam-ontologies>.
- Funded by the European Research Council under the European Union Seventh Framework Program (FP7/2007-2013) / ERC grant agreement 267583.
- Responsibilities: Infer the concepts from CompMusic makam music corpora, music theory knowledge and metadata in MusicBrainz, construct the ontologies

## • **Beatscape** 2010

*Instrument Built in the Course, Technology Ensemble* *Georgia Tech*

- A Mixed Virtual-Physical Environment for Musical Ensembles, with Aaron Albin, Brian Blosser, Oliver Jan and Akito Van Troyer
- Related papers: [25] in **Publications**
- Performed at the *FutureMedia Fest*; 5 October 2010; Atlanta, GA, USA and the [Listening Machines 2010](#); 17 April 2010; Eyedrum, Atlanta, GA, USA
- Responsibilities: Physical set-up of the instrument, image detection via [Reactivision framework](#), data communication between Reactivision and the main software, audio playback

## • **Bayan Sound Modelling and Synthesis** 2009 – 2010

*Graduate Assistantship Research* *Georgia Tech*

- Mathematical modelling the sounds produced by a bayan drum and synthesising them in real-time
- Funded by NSF CreativeIT Grant, Award #0855758
- Responsibilities: Tabla Segmentation, analysis of segments, parameter estimation, mathematical modelling from parameters, building python external and adding relevant control structures in puredata for real-time synthesis from the model

## • **Urban Remix** 2009

*A Locative Sound Project Designed in the Course, Network Music* *Georgia Tech*

- A collaborative and locative sound project
- Audio Team with Aaron Albin and Avinash Sastry

- Responsibilities: Experimented with different sound generation software, optimised sound generation time, designed a sound rendering system that gives the feeling of localisation and distance of the sound sources which are consistent to the paths that are drawn by the user, audio post-processing for clippings and normalisation

## Teaching

- **Universitat Pompeu Fabra** Sep 2012 – July 2015  
*Signals and Systems (Course code: MTC.21409)* Barcelona, SPAIN
  - Laboratory Coordinator in 2015
  - Laboratory Instructor between 2012 and 2015
  - Seminar Instructor in 2013

## Distinctions

- **Universitat Pompeu Fabra Fellowship** Sep 2012 – Sep 2016  
*PhD Research Funding* Barcelona, SPAIN

## Invited Talks and Seminars

- **Why Reproducibility Matters? A Personal Experience** February 2017  
*Universitat Pompeu Fabra* Barcelona, SPAIN
  - Talk given within the scope of the [Maria de Maeztu Strategic Research Program](#). Presented the importance of reproducibility in academic research, which I had learned by experience throughout my academic studies. Provided guidelines and best-practices for conducting reproducible research.
  - The slides are available at <https://zenodo.org/record/255537>.
- **Culture specific approaches in music technology: Turkish Music Case** February 2016  
*Multiple Universities* TURKEY
  - A series of seminars showcasing the technologies developed within the [CompMusic Project](#).
  - Took place in *Istanbul Technical University State Conservatory, Yıldız Technical University State Conservatory, Yıldırım Beyazıt University State Conservatory, Bogaziçi University Department of Computer Engineering, Middle East Technical University Informatics Institute and Bilkent University Department of Electrical and Electronics Engineering.*
- **Symbolic analysis of Ottoman-Turkish makam music** June 2015  
*University of the Basque Country* San Sebastian, SPAIN
  - Invited talk. Presented an overview of the state-of-the-art and possible extensions for music transformation
- **Otomatik nota-icra eşleştirme (Audio-score alignment)** June 2014  
*Istanbul Technical University State Conservatory* Istanbul, TURKEY
  - Invited talk in the seminar “Ses teknolojisinde Türk Müziği’ne özgü tasarımlar”
- **Galata Electroacoustic Orchestra** June 2013  
*Conservatorio Niccolò Paganini di Genova* Genoa, ITALY
  - Taught two lessons titled “Pitch analysis of traditional Turkish music” and “Information processing techniques applied to traditional Turkish music” (Erasmus Intensive Program (IP) No: 2012-1-IT2-ERA10-38878)

## Supervision and Mentoring

- **Women in MIR** January 2017 – ongoing
  - Mentor
- **Hasan Sercan Atlı** June, 2014 – ongoing
  - Development of a modular, extensive and customizable desktop application for accessing and visualizing the music information sources, the features and the analysis results. The source code is available at <https://github.com/MTG/dunya-desktop>
  - CompMusic makam music corpus [18]
  - Melody extraction for Ottoman-Turkish makam music recordings [14]
  - Tonic identification methodology proposed in [10]

- The works listed above are included in his master thesis titled “An interactive tuition software for the melodic dimension of Turkish makam music.” The software was awarded with the “silver” prize in the student design competition of *139<sup>th</sup> Audio Engineering Society Convention, NY, USA (2015)*.
- Introduced the fundamentals of academic writing, object oriented programming, version control, code coverage, continuous integration
- **Burak Uyar** June, 2014 – March 2016
  - CompMusic makam music corpus [18].
  - Tools to generate MusicXML scores from the [SymbTr makam music score collection](#). The open converter is hosted at <https://github.com/burakuyar/MusicXMLConverter/>.
- **Altuğ Karakurt** June, 2015 – January 2017
  - Automatic mode recognition and tonic identification [5]. An open source toolbox implementing the methodology is hosted at <https://github.com/altugkarakurt/morty/>.
- **Miraç Atıcı** February, 2015 – March 2016
  - Fundamentals of academic writing, object oriented programming and Python

## Compositions and Sound Design

- **A Reproduction of La Espiral Eterna** March, 2011; Revised December 2011
  - *Classical Guitar, Signal Processing & Organised Sound*

*Taking the side of the weak, the piece expresses the clashes between those in power and those who are oppressed. It acknowledges that the struggle will continue forever; forming an "eternal spiral".*

    - Performed at KSU New Music Festival; 28 March 2011; Kennesaw State University, Kennesaw, GA, USA
    - Original composition for classical guitar by Leo Brouwer, 1971
    - Guitar recording taken from "Guitar Recital" album by Dmitris Regginos, 2004. Samples are taken from [freesound.org](http://freesound.org) and Youtube.
- **Automobile** Feb, 2011
  - *Organised Sound, Bağlama & Signal Processing*

*Having a high sensational, perceptual and cognitive capability, human beings rarely think about their limits or errors. They forget that they can be confused or deceived...*

    - Contributed by Oliver Jan and Akito Van Troyer
    - Composed using samples from field recordings and samples that are taken from [freesound.org](http://freesound.org) and [Acoustical Society of America](#)
- **Road to School** Oct 2010
  - *Short Movie, Directed by Yiğitalp Ertem*
    - Foley, sound design and mixing
    - Screened in [22. Ankara International Film Festival](#); March 2011; Ankara, Turkey and METU Film Festival; February 2011; Ankara, Turkey

## Selected Performances

- **Crossole**
  - Performed at the 2011 Atlanta Maker Faire 2011; 10 September 2011; Atlanta, GA, USA and the [Listening Machines 2011](#); April 2011; Atlanta, GA, USA
- **Beatscape**, a mixed virtual-physical environment for musical ensembles
  - Performed at the [FutureMedia Fest](#); 5 October 2010; Atlanta, GA, USA and the [Listening Machines Concert](#); 17 April 2010; Atlanta, GA, USA
- **LOLC**, collaborative live coding environment
  - Performed at the [NIME 2011](#); 29 May 2011; Oslo, Norway, the [FutureMedia Fest](#); 5 October 2010; Atlanta, GA, USA and the [Listening Machines Concert](#); 17 April 2010; Atlanta, GA, USA
- **A Reproduction of La Espiral Eterna**
  - Performed at KSU New Music Festival; 28 March 2011; Kennesaw State University, Kennesaw, GA, USA



## Organization Experience

- **Barcelona Music Hack Day** July 2012 - 2013  
*One-day hacking session to realise any music related idea*  
– Volunteer in [Sónar](#) 2012 - 2013  
Barcelona, SPAIN
- **Sonic Generator Concert Series** Aug 2009 – May 2011  
*Ensemble-in-Residence at Georgia Institute of Technology*  
– Stage crew, video recording, set-up assistance  
Atlanta, GA, USA
- **Guthman Musical Instrument Competition** Feb 2010 & Feb 2011  
*Hosted by the Georgia Tech Center for Music Technology*  
– Set-up assistance and supervision  
Atlanta, GA, USA
- **METU International Classical Guitar Festival** Mar 2006 & Mar 2007  
*Organised by METU Classical Guitar Society*  
– Sound recording, set-up assistance  
Ankara, TURKEY

## Personal Interests

Traveling, cooking, computer, swimming, skiing, literature

## References

Available upon request