

GONG RONG

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EDUCATION

MTG-Universitat Pompeu Fabra

May 2015-Present

PhD candidate, expected thesis submission date: 30th September, 2018

Barcelona, Spain

Data-driven method for automatic pronunciation assessment of Jingju music singing voice

UPMC/IRCAM/TELECOM

September 2013-September 2014

Master 2 ATIAM

Paris, France

Acoustics, Signal Processing and Computer Science in Musical Applications

Mention: Awarded with honours (Assez bien)

Thesis: Score following for the alignment of singing voice

Université du Maine

September 2012-July 2013

Master 1 in Acoustics and Signal processing

Le Mans, France

Acoustics, Signal Processing and Computer Science in Musical Applications

Mention: Awarded with honours (Assez bien) **Rank:** 1/20.

Project: Dimensioning of an elliptical opening on the top plate of the Chinese instrument Pi'pa

Communication University of China

September 2008-July 2011

Master in Acoustics, Psychoacoustics and Signal Processing

Beijing, China

Thesis: Analysis on timbre features of the plucked-string instruments

Northwest University

September 2004-July 2008

Bachelor in Applied Mathematics

Xi'an, China

SUMMARY OF COMPETENCES

Music Signal Processing

\triangleright Chorus detection. \triangleright Melody extraction. \triangleright Intonation element segmentation. \triangleright Note transcription. \triangleright Tempo estimation. \triangleright High resolution methods for spectral estimation (MUSIC, ESPRIT).

Machine Learning

\triangleright Deep learning (CNNs, RNNs). \triangleright Gradient boosting machine. \triangleright Data clustering (PCA, K-means, Decision tree). \triangleright Bayesian inference (HMMs, HSMMs, CRFs).

Speech Enhancement

\triangleright Spectral subtraction (implicit Wiener filter, a priori SNR estimation Wiener filter). \triangleright One step prediction Kalman filter. \triangleright Noise power estimation by minimum statistics.

Computer Music

\triangleright Digital filter VST plugins programming. \triangleright Language LISP. \triangleright Constraint programming. \triangleright MIDI protocol.

RESEARCH EXPERIENCES

National Academy of Chinese Theatre Arts (NACTA) September 2016-Present
Project collaborator-Beijing City Social Science Foundation 16JDYTA016 *Beijing and Barcelona*

- Collect jingju singing recording materials of both professional and amateur singers.
- Develop iOS jingju singing courseware.

MTG-UPF May 2015-Present
CompMusic project *Barcelona, Spain*

- Develop algorithms for computer-aided jingju (Beijing opera) singing learning system.
- Automatically retrieving Jingju singing features (syllable segmentation, singing phrase identification).

iOS developer October 2014-May 2015
iOS music application development *Paris, France*

- Develop the iOS application - Acousticbrainz jukebox for exploring music by emotion.

IRCAM March 2014-August 2014
Master 2 internship *Paris, France*

- Improve the performance of the score following system - Antescofo on singing voice.

Université du Maine March 2013-June 2013
Master 1 project *Le Mans, France*

- Design the opening on the top plate of the traditional Chinese instrument - Pi'pa to augment its low-frequency performance.

Communication University of China September 2010-September 2011
Master thesis work *Beijing, China*

- National Natural Science Foundation of China, NSFC10804100
- Analysis the timbre of traditional Chinese plucked-string instruments by musical features and subjective listening experience

3G Audio November 2010-January 2011
Master internship *Dongguan, China*

- Study the impact of membrane materials on the sound quality of loudspeaker

PUBLICATIONS IN CHRONOLOGICAL ORDER

Eduardo Fonseca, Rong Gong, Dmitry Bogdanov, Olga Slizovskaia, Emilia Gomez, Xavier Serra

Acoustic Scene Classification by Ensembling Gradient Boosting Machine and Convolutional Neural Networks

2n workshop on Detection and Classification of Acoustic Scenes and Events (DCASE), Munich, Germany, November, 2017

Rong Gong, Rafael Caro Repetto, Xavier Serra

Creating an A Cappella Singing Audio Dataset for Automatic Jingju Singing Evaluation Research

4th International Digital Libraries for Musicology workshop (DLfM 2017), Shanghai, China, October, 2017

Rong Gong, Xavier Serra

Identification of potential Music Information Retrieval technologies for computer-aided jingju singing training

Chinese traditional music technology session - China conference on sound and music technology, Suzhou, China, October, 2017

Rong Gong, Jordi Pons, Xavier Serra

Matching Audio to Score by Combining Phonetic and Duration Information

International Society for Music Information Retrieval Conference (ISMIR), Suzhou, China, October 2017

Jordi Pons, Rong Gong, Xavier Serra

Score-informed Syllable Onset Detection for A Cappella Singing Voice with Convolutional Neural Networks

International Society for Music Information Retrieval Conference (ISMIR), Suzhou, China, October 2017

Jordi Pons, Olga Slizovskaia, Rong Gong, Xavier Serra

Timbre Analysis of Music Audio Signals with Convolutional Neural Networks

European Signal Processing Conference (EUSIPCO), Kos island, Greece, August 2017

Rong Gong, Nicolas Obin, Georgi Dzhambazov, Xavier Serra

Score-informed Syllable Segmentation for Jingju A Cappella Singing Voice with Mel-frequency Intensity Profiles

Folk Music Analysis (FMA), Málaga, Spain, June 2017

Rong Gong, Yile Yang, Xavier Serra

Pitch Contour Segmentation for Computer-aided Jingju Singing Training

Sound and Music Computing Conference (SMC), Hamburg, Germany, August 2016

Rafael Caro Repetto, Rong Gong, Nadine Kroher, Xavier Serra

Comparison of The Singing Style Of Two Jingju Schools

International Society for Music Information Retrieval Conference (ISMIR), Málaga, Spain, October 2015

Rong Gong, Philippe Cuvillier, Nicolas Obin, Arshia Cont

Real-Time Audio-to-Score Alignment of Singing Voice Based on Melody and Lyric Information

Interspeech, Dresden, Germany, September 2015

Xin Wang, Rong Gong

Consonance of Musical Dyads of Chinese Plucked Instruments

2nd International Conference on Computer Science and Network

Technology, ICCSNT, Changchun, China, 2012

Rong Gong, Zihou Meng

Analysis on Tonal Components of Plucked-String Instruments Tones

National Youth Conference of Acoustical Society of China, CYCA 9th

Guangzhou, China, November 2011

Rong Gong, Zihou Meng

Analysis on Feature Discrimination of Plucked-string Instruments Tones

National Conference on Man-Machine Speech Communication, NCMMSC2011

Xi'an, China, October 2011

LANGUAGES

Mandarin	Mother tongue
English	Diploma CLE B2
French	Diploma TCF B2
Spanish	B1

COMPUTER SKILLS

Programming

Python, Matlab, C++, Objective-C, Swift

Machine learning and Deep learning packages

Keras, Theano, Scikit-learn

Speech annotation and analysis tool

Praat

Music Production

Ableton Live, Cubase