RONG GONG

rong.gong@upf.edu ⋄ ronggong.github.io

Zhong guan cun bei yi tiao jia 5 lou 3 dan yuan 501, 100190 Beijing China

140 Boulevard de la Pétrusse, 2330 Luxembourg

EDUCATION

MTG-Universitat Pompeu Fabra *May 2015-Sep 2018*
PhD *Barcelona, Spain*
Automatic assessment of singing voice pronunciation: a case study of jingju (Beijing opera) music
Mention: cum laude
http://compmusic.upf.edu/phd-thesis-rgong

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*

WORK AND RESEARCH EXPERIENCES

AIVA technologies April 2019-Present
Researcher *Luxembourg city*
· Develop personalized music generation models.

Jukedeck Nov 2018-April 2019
Research internship *London, UK*
· Research and develop singing voice dereverberation and denoising deep learning models.
· Develop music automatic mixing models.

MTG-UPF Oct 2018
Essentia project *Barcelona, Spain*
· Implement PYin (probabilistic Yin) pitch extraction algorithms in Essentia (Open-source library and tools for audio and music analysis, description and synthesis).

MTG-UPF Apr 2018-Sep 2018
TECSOME project *Barcelona, Spain*

· Develop automatic solfège assessment API using KALDI.

National Academy of Chinese Theatre Arts (NACTA) Sep 2016-Sep 2018
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-Sep 2018
CompMusic project *Barcelona, Spain*

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

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

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

IRCAM Mar 2014-Aug 2014
Master 2 internship *Paris, France*

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

Université du Maine Mar 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 Sept 2010-Sept 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 Nov 2010-Jan 2011
Master internship *Dongguan, China*

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

SUMMARY OF COMPETENCES

Music Signal Processing
▷ Chorus detection. ▷ Melody extraction. ▷ Intonation element segmentation. ▷ Note transcription. ▷ Tempo estimation. ▷ High resolution methods for spectral estimation (MUSIC, ESPRIT).

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

Speech Technologies
▷ Spectral subtraction (implicit Wiener filter, a priori SNR estimation Wiener filter). ▷ One step prediction Kalman filter. ▷ Noise power estimation by minimum statistics. ▷ KALDI speech recognition

Computer Music

▷ Digital filter VST plugins programming. ▷ Language LISP. ▷ Constraint programming. ▷ MIDI protocol.

ACADEMIC ACTIVITIES

Google Speech Summit traveling grant, London, May 2018

Task captain of MIREX 2018: Automatic Lyrics-to-Audio Alignment

ISMIR conference reviewer 2017, 2018

PUBLICATIONS IN CHRONOLOGICAL ORDER

Rong Gong, Xavier Serra
Singing Voice Phoneme Segmentation by Hierarchically Inferring Syllable and Phoneme Onset Positions
Interspeech, Hyderabad, India, September 2018

Eduardo Fonseca, Rong Gong, Xavier Serra
A Simple Fusion of Deep and Shallow Learning for Acoustic Scene Classification
Sound and Music Computing Conference (SMC), Limassol, Cyprus, July 2018

Eduardo Fonseca, Rong Gong, Dmitry Bogdanov, Olga Slizovskaia, Emilia Gomez, Xavier Serra
Acoustic Scene Classification by Ensembling Gradient Boosting Machine and Convolutional Neural Networks
2nd 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, Objective-C, Swift, Matlab, C
Web development	JavaScript, Node.js, MongoDB
Machine learning and Deep learning packages	Tensorflow, Keras, Scikit-learn
Speech analysis and recognition tools	KALDI, Praat
Music Production	Ableton Live, Cubase