


## Yixin WANG

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## EDUCATION

## Doctor of Philosophy

Xi'an Jiaotong University

Faculty of Electronic and Information Engineering

Topic: Automatic Sound Quality Evaluation, Timbre Analysis and Music Information Retrieval

Xi'an, China

Mar. 2020 – Present

## Master of Science

Xi'an Jiaotong University

Faculty of Electronic and Information Engineering

Major in Control Science and Technology

GPA: 90.03/100

Ranking: 6/107

Xi'an, China

Sept. 2017 – Jan. 2020

## GRADE DE MASTER

Ecole CentraleSupélec

CentraleSupélec - XJTU Double Degree Program GPA: top 20%

Île-de-France, France

Aug. 2015 – Jun. 2017

## Bachelor of Engineering

Xi'an Jiaotong University

Faculty of Electronic and Information Engineering

Major in Automation

GPA: 86.38/100

Ranking: 13/156

Xi'an, China

Sept. 2013 – Jun. 2015

## EXPERIENCE

## Summer Research Student

CERN, ATLAS

Working with the ATLAS OpenData Group, mentored by Dr. Arturo Rodolfo SANCHEZ PINEDA and Dr. Leonid SERKIN

Geneva, Switzerland

Jul. 2019 – Aug. 2019

## Research Assistant

Ministry of Education Key Lab For Intelligent Networks and Network Security

Supervisor: Prof. XiaoHong Guan

Research on sound quality analysis

Xi'an, China

Mar. 2018 - Present

## Teaching Assistant

School of Mathematics and Statistics, Xi'an Jiaotong University

Lectured **Linear Algebra and Analytic Geometry** tutorial session for undergraduate students

Revised the assignments and examination papers

Xi'an, China

Sept. 2017 – Jan. 2018

## PROJECT

## Project on Automatic Timbre Evaluation of Instrumental Music

Mar. 2018 – Present

Xi'an Jiaotong University, Xi'an, China

- Presided over this project and supervised an undergraduate dissertation
  - Created woodwinds audio dataset for automatic timbre evaluation
  - Proposed a method for identifying the clarinet reed quality by evaluating tone quality based on the harmonic structure and energy distribution and achieved 84% accuracy on clarinet data
  - Developed a tone quality evaluation system for woodwinds by integrating the pulse signal decoupling and deep learning
  - Achieved 95% classification accuracy on woodwinds reed quality evaluation
- Skills:** Python, Pytorch, Praat, Matlab, Audio Processing and Analysis, Deep learning methods in applications of signal processing

## Pitch Level Monitor Development

Nov. 2020 – Dec. 2020

Xi'an Jiaotong University, Xi'an, China

- Developed an online frequency measurement application for "2021 Concert for Bridging Art and Science for High School"

**Skills:** Python, PyQt5, Qt Designer

**Project Semi-Supervised Learning (Machine Learning)**

Feb. 2017 – Mar. 2017

**CentraleSupélec, France**

- Used manifold structure (MNIST database) for partially labeled classification
  - Achieved 90.56% accuracy on hand-writing recognition
- Skills:** Machine learning pattern, Dealing with a dataset not fully labeled, Matlab

**Project on Human Capital Management in Organizations**

Mar. 2015

**Xi'an Jiaotong University, Xi'an, China**

- Self-searched on the optimal design and standardized mathematical model of Managing Human Capital in Organizations
- Designed a model with Crowd-Sensing Network with memory to describe the human capital network of an organization
- Analyzed the impact of resignation within budget and productivity constraint

**Awards:** Meritorious Winner (Top 13%), The Interdisciplinary Contest in Modeling (ICM), USA**Skills:** Mathematical Modeling, Matlab**Solving NP-hard problem of designing routes for tourists in France**

Apr. 2017 - Jun. 2017

**CentraleSupélec, France**

- Presided over the project "Travel around France (Travelling salesman problem)"
- Compared several algorithms on solving this problem (Brute Force, Greedy algorithm, Dynamic Programming)
- Showed the routes of the tourists by Google Map API

**Skills:** Google Map API, Java, Optimization Methods, Integer linear programming formulation**Software development**

Feb. 2016 - Mar. 2016

**CentraleSupélec, France**

- Programmed the game 2048 of console version with Java
- Constructed a graphic interface with UML based on the console version

**Skills:** Java, UML, software design**Project on designing a dance performance "Blue Orchid" on anthropomorphic robots**

Aug. 2014 - Oct. 2014

**Xi'an Jiaotong University, Xi'an, China**

- Applied PID control rather than open-loop control to make the robot system more robust
- Adjusted parameters to optimize the stability performance
- Realized system stability when processing walking, turning around and forward and backward roll

**Awards:** 1<sup>st</sup> prize of the 2014 National Robot Competition of China**Skills:** Application of Control Theory, Experience in parameter adjustment, RoboBasic, Robot dance, and appearance design

## Publication

[1] Y. Wang, X. Guan, Y. Du and N. Nan, "Harmonics Based Representation in Clarinet Tone Quality Evaluation," *ICASSP 2020 - 2020 IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)*, Barcelona, Spain, 2020, pp. 766-770.  
doi: 10.1109/ICASSP40776.2020.9054020

## AWARD

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|--|------|
| • Excellent Postgraduate, Xi'an Jiaotong University  | 2018 |
| • National Scholarship, China  | 2018 |
| • The Interdisciplinary Contest in Modeling (ICM), <b>Meritorious Winner (Top 13%)</b> , USA | 2015 |
| • National Robot Competition 2014, <b>First prize (Top 15%)</b> , China                      | 2014 |
| • Excellent Volunteer of "smart school" project of Samsung                                   | 2014 |
| • Biogen Idec - NWU China Community Lab Scholarship, Cambridge, Boston, USA                  | 2011 |

## SKILL

**Mother tongue:**

Chinese

**Foreign language(s):**

Listening

Reading

Spoken interaction

Spoken production

Writing

English

C1

C1

B2

B2

B2

French

B2

C1

B2

B2

B2

Diplôme d'Etudes en Langue Française B2

Levels: A1 and A2: Basic user - B1 and B2: Independent user - C1 and C2: Proficient user Common European Framework of Reference for Languages**Research skills:**

Music information retrieval, Instrument Acoustics, Signal Processing, Deep Learning

**Programming:**

Python, Bash, Java, Matlab, C

**Tools:**

Pytorch, PyQt5, Git, Latex, Adobe Premiere, Adobe Audition, Kaldi