

JIAYING LI

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EDUCATION

Master of Science in Music Technology (GPA: 3.75/4.0) Jan 2022 - Dec 2023

Georgia Institute of Technology Atlanta, USA

Courses: Digital Audio Processing for Music, Digital Speech Signal Processing, Statistical Machine Learning, Machine Learning, Fourier Techniques&Signal Analysis, Music Perception&Cognition, Cognitive Science, etc.

Bachelor of Science in Electrical Information Engineering (GPA: 3.26/4.0) Sept 2017 - May 2021

Minor in Philosophy (GPA: 3.6/4.0) Sept 2018 - May 2021

The Chinese University of Hong Kong, Shenzhen Guangdong, China

Courses: Basic Macroeconomics, Statistics, Linear Algebra, Optimization, Data Structures, Analog Integrated Circuits, Microprocessors&Computer Systems, Multimedia Coding&Networking, etc.

PUBLICATION & CONFERENCE

- J. Li and N Condit-Schultz, “Four Chords Go a Long Way: Measuring Chord Progression Similarity in Chinese Popular Music”, 2022 Society for Music Perception and Cognition (SMPC), poster session.
- K. Xue, Z. Liu, J. Li, X. Ji and H. Qian, “SongBot: An Interactive Music Generation Robotic System for Non-Musicians Learning from A Song”, 2021 IEEE International Conference on Real-time Computing and Robotics (RCAR)

RESEARCH & PROJECTS

Audio Technology II Interaction Website Jan 2023 - May 2023

Research Assistant, Computational and Cognitive Musicology Lab Atlanta, USA

- Developed an interactive website utilizing JavaScript, HTML, and CSS to illustrate and visualize Digital Signal Processing (DSP) concepts effectively.
- Authored coding practice exercises tailored to beginners for MUSI 2526 (Introduction to Audio Technology II).

Singing Voice Conversion based on Target Waveform Mapping Sept 2022 - Apr 2023

Computational and Cognitive Musicology Lab, Georgia Institute of Technology Atlanta, USA

- Collected and curated a data set of 270-minute singing voice dataset, including 20 different songs sung by 3 different singers.
- Cut the singing voice frames manually and use the LSTM model to implement the wav2wav singing voice conversion.

Perceptual Harmonic Similarity Adapted to Human Ear Jan 2022 - Nov 2022

Computational and Cognitive Musicology Lab, Georgia Institute of Technology Atlanta, USA

- Collected and curated a data set of harmonic progressions in Chinese Pop music.
- Developed the Chord Progression Similarity Index (CPSI), a Markov-chain-based objective metric for chord progression similarity, and wrote JavaScript experimental interface.
- Conducted a human-subject psychology experiment to evaluate the CPSI and analyzed the results by using DBSCAN Model.

Kaggle - Lyft Motion Prediction for Autonomous Vehicles Sept 2020 - Nov 2020

Rank Top 15%

- Cleaned and filtered a complex dataset of various driving records use Python
- Analyzed the data and used the Resnet34 model to predict the motion of autonomous vehicles

Facial Beauty

Apr 2019 - Mar 2020

Research Assistant, Shenzhen Institute of Artificial Intelligence and Robotics for Society

Guangdong, China

- Assisted the project team and collected a human face database with over 4,900 samples.
- Extracted linear features of human faces using the VGG16 model.
- Designed a system to predict the facial beauty degree by using the XGboost model.

Coursework Projects

Jan 2022 - Dec 2022

- CS 7641 Machine Learning Project: Autotrader (Python)
- ECE 6254 Statistical Machine Learning: Intrusion Detection System Using Machine Learning (Python)
- ECE 6255 Digit Speech Signal Processing: Arbitrary Modification of Speech Characteristics in Segmental Durations (MATLAB)
- MUSI 6004 Technology Ensemble: Painting Instrument (Python)
- MUSI 6203 Project Studio - Music Tech: Musical Cube (Python)

INTERNSHIP

User Experience Research Product Engineer Intern

Aug 2021 - Dec 2021

SZ DJI Technology CO., LTD.

Guangdong, China

- Conducted perceptual experiments to improve user experience in DJI Avata and DJI Goggles 2.
- Conducted ergonomics experiments to improve the design of DJI Goggles mask's shape and weight
- Analyzed optical data and optimized the qualifying range for the products.
- Applied and obtained a patent for head-mounted mask design.

Music Entertainment Operations Intern

Sept 2020 - Mar 2021

Kuwo Music, Tencent Music Entertainment

Guangdong, China

- Collected and curated click-through rate data on the Tencent website using Python and complete the database.
- Analyzed and predicted user preferences using XGBoost Model.
- Completed the fourth quarter product planning report and a sixteen-page competitive product analysis report.

SKILLS

Programming	Python, C, C++, Java, JavaScript, R, MATLAB, HTML, CSS
Frameworks	SciPy, Tensorflow, Pytorch, MXNET, Keras, TensorBoard
Models	CNN, LSTM, SVM, GMM, RNN, GAN, VAE
Tools	Microsoft Office, Adobe Premiere, Photoshop, Logic Pro, MAX, XMind, Axure