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: Music Perception & Cognition, Cognitive Science, Digital Audio Processing for Music, Digital Speech Signal Processing, Statistical Machine Learning, Machine Learning, Fourier Techniques & Signal Analysis, 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 — **Shenzhen, China**

Courses: Statistics, Linear Algebra, Optimization, Data Structures, Analog Integrated Circuits, Digital Signal Processing, Microprocessors & Computer Systems, Multimedia Coding & Networking, Basic Macroeconomics, 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 EXPERIENCES

Disability Access User Interface for Learning Materials — **Jun 2023 - Aug 2023**

Advisor: Dr. Michael Helms — **Atlanta, USA**

- Conducted 25 interviews regarding webpage design for visually impaired users and proposed a streamlined workflow model to enhance the design process.
- Developed a demo website using JavaScript, HTML, and CSS to illustrate a novel learning material accessible webpage.
- Developed an interactive software interface and used Figma to illustrate and visualize the prototype.

Audio Technology II Interaction Website — **Jan 2023 - May 2023**

Research Assistant, Computational and Cognitive Musicology Lab — **Atlanta, USA**

Advisor: Dr. Arthur Claire

- 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**

Advisor: Dr. Nat Condit-Schultz

- Collected and curated a data set of 270-minute singing voice dataset.
- 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**

Advisor: Dr. Nat Condit-Schultz

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 human perception.
- •Designed a human-subject psychology experiment interface by jsPsych and collected 34 experiment results.
- •Evaluated CPSI and analyzed the outcomes using the DBSCAN model alongside statistical tests.

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 Recommendation **Apr 2019 - Mar 2020**

Advisor: Dr. David Zhang

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

DSP Projects	Speech Speed Shifting (MATLAB), Noise Cancellation (MATLAB)
ML Projects	Autotrader (Python), Intrusion Detection System (Python)
HCI Projects	Musical Painting Instrument (Python), Musical Rubik 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 User Experience 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	Numpy, Pandas, SciPy, TensorFlow, PyTorch, Keras, TensorBoard
Models	CNN, LSTM, SVM, GMM, RNN, GAN, VAE
Tools	Microsoft Office, Adobe Premiere, Photoshop, Logic Pro, MAX, XMind, Axure, Figma, etc.