HAN ZHANG

zhanghanpqqo@gmail.com ◇ website: zhanghanpqqo.github.io/HanZhang/

EDUCATION AND INTERNSHIP

Department of Automation, Tsinghua University, China *Aug. 2015 - Jul. 2019*
- B.S. in Automation;
- Minor in Music Technology and Engineering.

McCormick School of Engineering, Northwestern University *Aug. 2019 - Jun. 2021*
- M.S. in Electrical Engineering; **Overall GPA: 3.97/4.0;**

Center of New Music and Audio Technoogy, UC Berkeley *Aug. 2021 - Present*
- Research Internship in Music Technology.

RESEARCH EXPERIENCE

Project: Computer-assisted auto-orchestration and texture generation *Aug. 2021 - Present*
Advisor: Carmine Emanuele Cella, Assistant Professor, UC Berkeley *Research Assistant*
- Proposed a workflow for generating musically reasonable multi-track scores for orchestra given the constraints of configuration, timbre morphology and measures of textural complexity. Currently modeling a deep learning framework based on generative neural networks and realizing the auto transformation from parameter space of conditions to symbolic space of scores.

Project: Timbre Analysis and Synthesis *May 2020 - Jun. 2021*
Advisor: Thrasyvoulos N. Pappas, Professor, Northwestern University *Team Leader*
- Designed a framework for the extraction and modification of harmonics morphological features for musical timbre. Practiced experiments to verify the analytic power of the the model, including musical instrument recognition and timbre descriptor mapping. Developed a synthesis method that allows the sound reconstruction, design, and morphing based on understandable features. Implemented a GUI with PyQT that integrated all the functions and allowed future exploration on the model.

Project: Musical Audio Processing System *Feb. 2018 - Jul. 2018*
Advisor: Jianming Hu, Associate Professor, Tsinghua University *Research Assistant*
- Designed and implemented a system for musical audio processing, based on C++. The system allows audio processes, musical mixing operations, sound visualization and file operations. It is also designed to be scalable and available for plugins. Finished a user-friendly interface corresponded with users' conceptual model.

Project: Intelligent Tourism System *Mar. 2018 - Jul. 2018*
Advisor: Yushun Fan, Professor, Tsinghua University *Research Assistant*
- Designed and realized a route planning algorithm of the Intelligent Tourism System which came online in our campus. Solved the problem of selecting scenic spots and planning visit order user favorability and improved efficiency of genetic algorithm.

Project: UAV Hardware-In-Loop Simulation System *Oct. 2018 - Jul. 2019*
Advisor: Yisheng Zhong, Professor, Tsinghua University *Research Assistant*
- Independently designed a framework of Unmanned Aerial Vehicle Hardware-In-Loop realtime simulation system including embedded controller of the flights based on Raspberry Pi and Pixhawk, modules in the Gazebo environment, and ground communication system interface realized with QT.

SKILLS AND WORKS

Operation System	Windows, Linux and MacOS
Programming Languages	Python, MATLAB, C, C++, SQL, JavaScript, Verilog, Max MSP
Music Tools	Logic Pro, Cubase, Pro Tools, Sibelius, Waves, Izotope
Compositional Works	https://soundcloud.com/zhanghanpqqo
Standard English Test	**TOEFL:** 104 (R: 27; L: 28; S: 25; W: 24)
	GRE: V-152 (56%) + Q-170 (96%) + AW-3.5 (41%)