Baotong Tian

✉ baotongtian0527@gmail.com   •   ⌨ user-tian

Education

Tsinghua University   **September 2020 − Present**
Bachelor of Science in Engineering
Major in Automation

GPA 3.858/4.0

Related Coursework:

Programming(Mastering):
○ Python   ○ C
○ Matlab   ○ C++

Music-Related:
○ Vocal Foundation to Improve   ○ Theory and Production of Song Arrangement

Mathematics:
○ Calculus I   ○ Discrete Mathematics
○ Calculus II   ○ Random Mathematics and Statistics
○ Linear Algebra I   ○ Numerical Analysis and Algorithms

Artificial Intelligence:
○ Basis of Artificial Intelligence   ○ Pattern Recognition and Deep Learning

Circuit & Control:
○ Principles of Electric Circuits   ○ Theory of Automatic Control
○ Digital Electronics

Computer-Related:
○ Data Structures   ○ Computer Networks and Applications
○ Principles and Systems of Computer

Others:
○ Signals and System Analysis   ○ Principles and Systems of Computer

Projects

Controllable Sheet Music Generation   **June 2021-Dec 2022**
Advisor: Xin Jin & Duo Xu & Song-chun Zhu
Beijing Institute for General Artificial Intelligence
○ Learned music psychology and emotion perception in music.
○ Learned the Generative Theory of Tonal Music and basic structure analysis of music.
○ Implementation of music And-or-Graph.
○ Data Labeling of figure in music, music structure division and music variation in phrases.
○ Implemented genetic algorithm for **music variation** in Python.

Tactile Music(Music Perception)   **Oct 2022-Feb 2023**
Advisor: Yun Wang & Zijin Li & Yingqing Xu
the Future Laboratory, Tsinghua University
○ STM32 programming for linear motor tactile device.
○ Designed experimental protocols
○ Analysis of experimental data relating to the relationship of fragrance and music

XAI   **Feb 2023-Present**
Advisor: Jiwen Lu & Jie Zhou
Department of Automation, Tsinghua University
○ Designed framework for baseline generation for attribution methods such as Integrated Gradients and RISE.

Music Information Retrieval–Chord Recognition   **Jun 2023-Present**
Advisor: Jian Wu
DeepMusic
○ Modified neural network framework to achieve higher performance in ACR(automatic chord recognition) tasks.

Achievements

Tsinghua Arts and Culture Merit Scholarship   **2021& 2022**
○ Received for students who have specialty in art and have made great contribution for cultural activities within the department.

Friends of Tsinghua-Weichai Power Scholarship   **2022**
○ Received for excelling GPA throughout the school year.

Extracurriculars

Music Production Skills Learning

○ Learned basic music production skills such as music arrangement and mixing on my own.
○ Four songs have already been released on QQ music & The NetEase's cloud music, produced by Logic Pro X.
○ Link:My musician page on The NetEase's Cloud Music
○ Link:My musician page on QQ Music