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**Link to Paper:** <https://aclanthology.org/2022.acl-long.549.pdf>

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According to Google Scholar the author with the **most number of citations** is Jinglin Liu.

### Learning the Beauty in Songs: Neural Singing Voice Beautifier: Summary

I chose Learning the Beauty in Songs: Neural Singing Voice Beautifier for my ACL paper. This paper was written by Jinglin Liu, Chengxi Li, Yi Ren, Zhiying Zhu, and Zhou Zhao. This paper talks about the electronic modification of voices for singing purposes. We learn that many of the current voice modifiers must be more mature. Knowing this we introduce the Neural Singing Voice Beautifier. This paper proposes a method for enhancing the beauty of singing voices using a neural network model called the Neural Singing Voice Beautifier (NSVB).

The SVB has been an ongoing essential and challenging endeavor for researchers. Its goal is to improve the intonation and tone of voice while keeping the content and vocal timbre. SVB is very prominent and intensively required both in professional recording studios and the entertainment industries in our daily life. The proposed system utilizes neural networks and audio signal processing techniques to

modify the pitch, tempo, and vibrato of a given singing voice, with the goal of improving its overall sound and look quality. The system works by being trained on a dataset of professionally recorded pop songs and is designed to work on both solo vocals and vocals accompanied by instrumental music. This is helpful to modify all types of music no matter who is making it.

The method that has been proposed would have a multi-process approach that will first separate the vocals from the instrumental accompaniment using source separation techniques. Once the vocals are isolated from the instruments, a set of modifications are applied to modify the pitch, tempo, and vibrato of the singing voice. Lastly, the transformed vocals are merged back with the original accompaniment to produce the final output.

The authors have conducted experiments on a dataset of Chinese and English pop songs to evaluate the effectiveness of their proposed method. The results showed that the system was able to improve the aesthetic quality of singing voices, and this was judged by human ears. Additionally, the system outperformed several existing methods of pitch and tone correctors in terms of naturalness and aesthetic quality.

The research has several practical applications in the music industry as I mentioned at the beginning of this essay. The modifying system can be used by music producers and sound engineers to enhance the beauty of a recorded singing voice, without the need for them to go into the song tweaking it manually. Also, the system can be used to create new versions of existing pop songs, with modified vocal performances that better fit the exact mood or style of the song.

In conclusion, "Learning the Beauty in Songs: Neural Singing Voice Beautifier" is a valuable contribution to the field of machine learning and audio signal processing. The proposed system offers a powerful tool for enhancing the aesthetic quality of singing voices in recorded music, with potential applications in the music industry and beyond. This will be a very helpful tool for producers who use such tools and are lacking time. Many producers that have multiple clients would be able to use the NSVB. They no longer will have to spend months and days on end in the studio finding the exact perfect sound.