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Future Works

1. **Improve analysis module and synthesis module.**

   ○ Fix over-smoothness problem.

   ○ Improve intelligibility and restoration performance.

2. **Introduce more prior knowledges of speech.**

3. **Improve internal feature.**

   ○ Mel scale is suitable for speech, but is not perfect for singing or music.

4. **Improve training data simulation.**

   ○ Make simulated data closer to real data distribution.

Thanks for your listening!

Demos on bilibili: @好河流

Code on github: @haoheliu

Related papers:

[1] Liu, H., Kong, Q., Tian, Q., Zhao, Y., Wang, D., Huang, C., & Wang, Y. (2021).
VoiceFixer: Toward General Speech Restoration with Neural Vocoder. arXiv preprint arXiv:2109.13731.
[2] Liu, H., Xie, L., Wu, J., & Yang, G. (2020). Channel-wise subband input for better voice
and accompaniment separation on high resolution music. arXiv preprint arXiv:2008.05216.
[3] Liu, H., Kong, Q., Liu, J. (2021). Music source separation with channel-wise subband phase-aware
ResUNet. ISMIR Music Demixing Workshop.
[4] Kong, Q., Cao, Y., Liu, H., Choi, K., & Wang, Y. (2021). Decoupling magnitude and phase estimation
with deep resunet for music source separation. arXiv preprint arXiv:2109.05418.