

## Appendix 2.2

### Report of International Conference Presentation

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Project Title:	Spoof Detection for Automatic Speaker Verification
Name of International Conference: (Link to website)	27 <sup>th</sup> Conference of the Oriental COCOSDA, 2024 <a href="https://ococosda2024.github.io/">https://ococosda2024.github.io/</a>
Title of Research Paper:	Speech Watermarking for Tampering Detection using Singular Spectrum Analysis with Quantization Index Modulation and Psychoacoustic Model
Name of all Co-authors (if any)	Puchit Bunpleng, Patharapol Laolakkana, Dr. Sasiporn Usanavasin, Phondanai Khanti, Dr. Kasorn Galajit, Dr. Jessada Karnjana
<p>Comments or feedback received at the conference:</p> <p>We get the comments and feedback as follows</p> <p><u>Question 1.</u> In the picture, you experiment with a ABC alphabet, why only B is change</p> <p><u>Answer.</u> The ABC alphabet is in the bit pixel format that we hide one bit into one frame. On the experiment we attack the watermarked signal only one the middle part. Then at the receive end we extract the watermark back , as you can see it is only letter B is change because we attack only on the middle of the watermarked signal</p> <p><u>Question 2.</u> what is the BER value that we consider signal to be degraded.</p> <p><u>Answer.</u> The BER is not exactly thing we used to consider the degrade of the sound, BER is used for how correctly of the extracted watermark compared with the original watermark. But the measurement that we use to consider the degrade of the sound is how much the listener can perceive the difference between the original signal before we hide the watermark and the watermarked signal. The measurement we use is log spectrum distance , signal distortion ratio and objective degrade grade.</p> <p><u>Question 3.</u> Can we use this method to detect fake video or fake voice.</p> <p><u>Answer.</u> It depends on the purpose, generally watermarking is used to verify the authenticity such we embedded the watermark into the real speech, we can consider the speech without watermark signal as a fake voice. But if fake voice refers to the synthesis one, the same considering based on the fact that we embedded the watermark into the real speech, we can consider the synthesis speech (without</p>	

watermark) signal as a fake voice. However, if the fake voice refer to the voice with are not from human, it is on the scope of spoof detection. We can consider watermarking is one of the method to detect spoof detection.

Contribution to the project:

This paper studies speech watermarking for tampering detection, which is related to detect spoofed speech (tampering is a kind of spoof method). This is so directly contributed to the project.

Photos













**[Required Documents]**

- A) Presentation Materials (e.g. PPT slides)
- B) Final Program of the conference

*Pantarat Vichathai*

**Reporter: Pantarat Vichathai**

**Date: 24/10/2024**