WHAT IS CLAIMED IS:

1. A computer-implemented method, comprising:

receiving, with at least one processor, audio data associated with at least one voice sample;

perturbing, with the at least one processor and a gradient-based perturbation algorithm, one or more of the at least one voice sample toward an edge of a decision boundary of at least one classifier model for voice identification;

perturbing, with the at least one processor, at least one pitch of each voice sample of the at least one voice sample to shift each voice sample of the at least one voice sample across the decision boundary of the at least one classifier model to provide at least one de-identified voice sample; and

encoding, with the at least one processor, a media file with the at least one de-identified voice sample.

2. The computer-implemented method of claim 1, wherein perturbing the one or more of the at least one voice sample toward the edge of the decision boundary of the at least one classifier model comprises using a gradient-based perturbation algorithm.

3. The computer-implemented method of claim 2, wherein using the gradient-based perturbation algorithm comprises:

computing, with the at least one processor, a gradient of the one or more of the at least one voice sample;

determining, with the at least one processor, a direction of the gradient; and

injecting, with the at least one processor, a perturbation into the one or more of the at least one voice sample based on the gradient and the direction.

4. The computer-implemented method of claim 2, wherein the gradient-based perturbation algorithm comprises a fast gradient signed method (FGSM) attack algorithm.

5. The computer-implemented method of claim 1, wherein perturbing the at least one pitch of each voice sample of the at least one voice sample comprises:

determining, with the at least one processor, a spectrum of pitches from each voice sample of the at least one voice sample;

inputting, with the at least one processor, the spectrum of pitches into a non-gradient based perturbation algorithm to provide a level of impact of perturbing each pitch of the spectrum of pitches;

selecting, with the at least one processor, at least one pitch of the spectrum of pitches based on the respective level of impact thereof; and

injecting, with the at least one processor, a perturbation into the at least one pitch selected to shift each voice sample of the at least one voice sample across the decision boundary of the at least one classifier model.

6. The computer-implemented method of claim 5, wherein the non-gradient based perturbation algorithm comprises at least one of a genetic algorithm, an evolutionary algorithm, a differential evolutionary algorithm, or any combination thereof.

7. The computer-implemented method of claim 1, wherein a difference between the at least one voice sample and the at least one de-identified voice sample is imperceptible to a human listener.

8. The computer-implemented method of claim 5, wherein selecting the at least one pitch from the spectrum of pitches comprises:

determining, with the at least one processor, the at least one pitch of the spectrum of pitches has a highest impact on de-identification of the audio data.

9. A system, comprising:

at least one processor; and

at least one non-transitory computer-readable medium comprising instructions to direct the at least one processor to:

receive audio data associated with at least one voice sample;

perturb one or more of the at least one voice sample toward an edge of a decision boundary of at least one classifier model for voice identification based on a gradient-based perturbation algorithm;

perturb at least one pitch of each voice sample of the at least one voice sample to shift each voice sample of the at least one voice sample across the decision boundary of the at least one classifier model to provide at least one de-identified voice sample; and

encode a media file with the at least one de-identified voice sample.

10. The system of claim 9, wherein perturbing the one or more of the at least one voice sample toward the edge of the decision boundary of the at least one classifier model comprises using a gradient-based perturbation algorithm.

11. The system of claim 10, wherein using a gradient-based perturbation algorithm comprises:

computing a gradient of the one or more of the at least one voice sample;

determining a direction of the gradient; and

injecting a perturbation into the one or more of the at least one voice sample based on the gradient and the direction.

12. The system of claim 10, wherein the gradient-based perturbation algorithm comprises a fast gradient signed method (FGSM) attack algorithm.

13. The system of claim 9, wherein perturbing the at least one pitch of each voice sample of the at least one voice sample comprises:

determining a spectrum of pitches from each voice sample of the at least one voice sample;

inputting the spectrum of pitches into a non-gradient based perturbation algorithm to provide a level of impact of perturbing each pitch of the spectrum of pitches;

selecting at least one pitch of the spectrum of pitches based on the respective level of impact thereof; and

injecting a perturbation into the at least one pitch selected to shift each voice sample of the at least one voice sample across the decision boundary of the at least one classifier model.

14. The system of claim 13, wherein selecting the at least one pitch from the spectrum of pitches comprises:

determining the at least one pitch of the spectrum of pitches has a highest impact on de-identification of the audio data.

15. A computer program product comprising at least one non-transitory computer-readable medium including one or more instructions that, when executed by at least one processor, cause the at least one processor to:

receive audio data associated with at least one voice sample;

perturb one or more of the at least one voice sample toward an edge of a decision boundary of at least one classifier model for voice identification based on a gradient-based perturbation algorithm;

perturb at least one pitch of each voice sample of the at least one voice sample to shift each voice sample of the at least one voice sample across the decision boundary of the at least one classifier model to provide at least one de-identified voice sample; and

encode a media file with the at least one de-identified voice sample.

16. The computer program product of claim 15, wherein perturbing the one or more of the at least one voice sample toward the edge of the decision boundary of the at least one classifier model comprises using a gradient-based perturbation algorithm.

17. The computer program product of claim 16, wherein using a gradient-based perturbation algorithm comprises:

computing a gradient of the one or more of the at least one voice sample;

determining a direction of the gradient; and

injecting a perturbation into the one or more of the at least one voice sample based on the gradient and the direction.

18. The computer program product of claim 16, wherein the gradient-based perturbation algorithm comprises a fast gradient signed method (FGSM) attack algorithm.

19. The computer program product of claim 15, wherein perturbing the at least one pitch of each voice sample of the at least one voice sample comprises:

determining a spectrum of pitches from each voice sample of the at least one voice sample;

inputting the spectrum of pitches into a non-gradient based perturbation algorithm to provide a level of impact of perturbing each pitch of the spectrum of pitches;

selecting at least one pitch of the spectrum of pitches based on the respective level of impact thereof; and

injecting a perturbation into the at least one pitch selected to shift each voice sample of the at least one voice sample across the decision boundary of the at least one classifier model.

20. The computer program product of claim 19, wherein selecting the at least one pitch from the spectrum of pitches comprises:

determining the at least one pitch of the spectrum of pitches has a highest impact on de-identification of the audio data.