Speech Recognition as a Threat Vector in Real-Time Doxxing

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RESEARCH QUESTION

Can processing live audio captured using Meta Ray-Ban glasses meaningfully increase the likelihood of positive target identification in real-time doxxing while maintaining latency and accuracy constraints relevant to a theoretical real-life scenario?

BACKGROUND

Figure 1. Meta Ray-Ban Glasses

Figure 2. SpeechBrain (Python / PyTorch-based ASR toolkit)

GLASSES POV
trying it on a REAL person in the subway
her results on my phone
SOMEONE PUT FACIAL RECOGNITION TECH ONTO META'S SMART GLASSES
SWIPE

Harvard project showed the threat of real-time doxxing using consumer wearable technology. Used facial recognition, but did not consider speech recognition.

Figure 3. Harvard *I-XRAY* Project (Instagram)

METHODOLOGY

Study broken up into two phases. Phase 1 = Model Validation, Phase 2 = Live Test for Feasibility

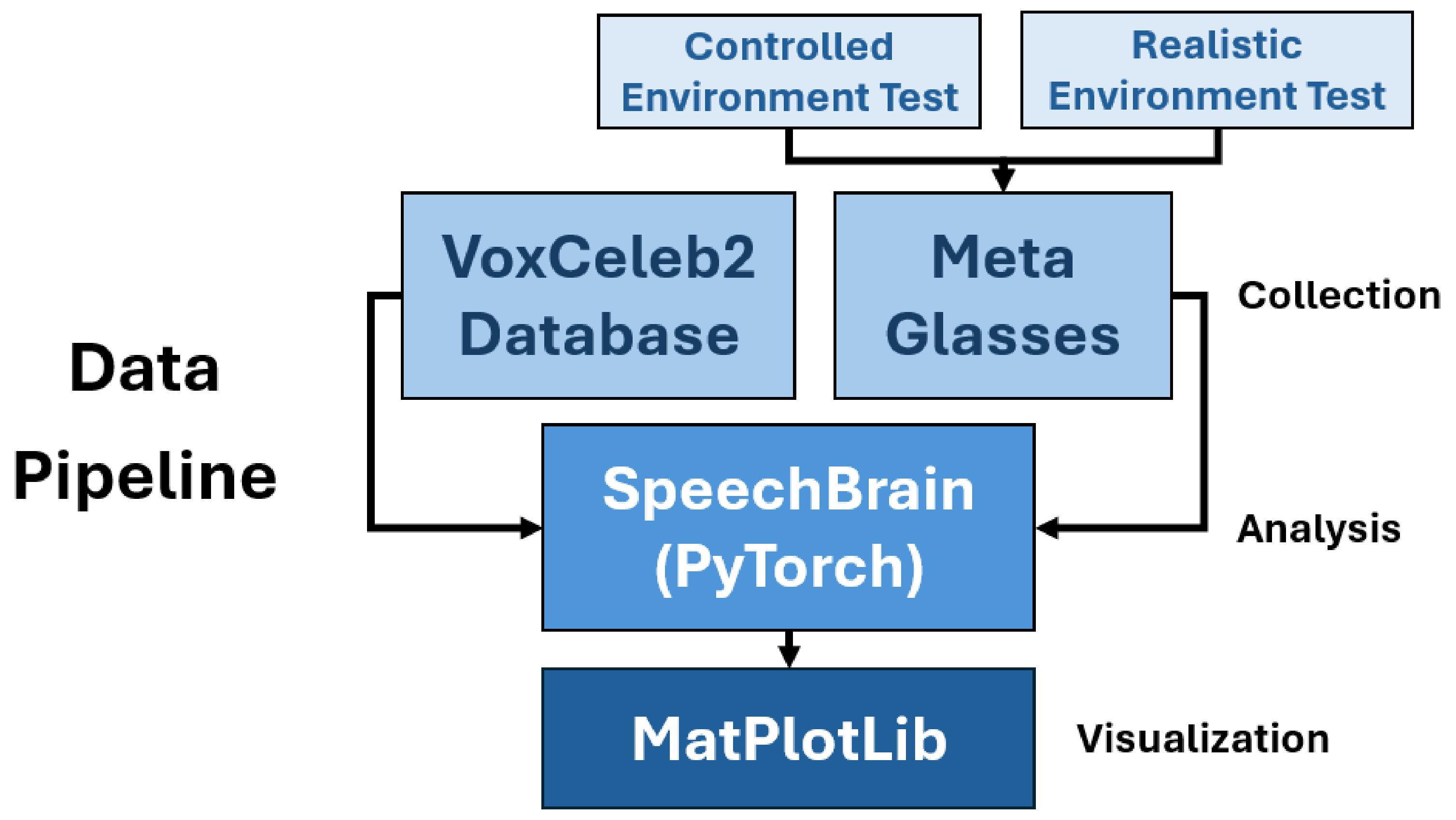
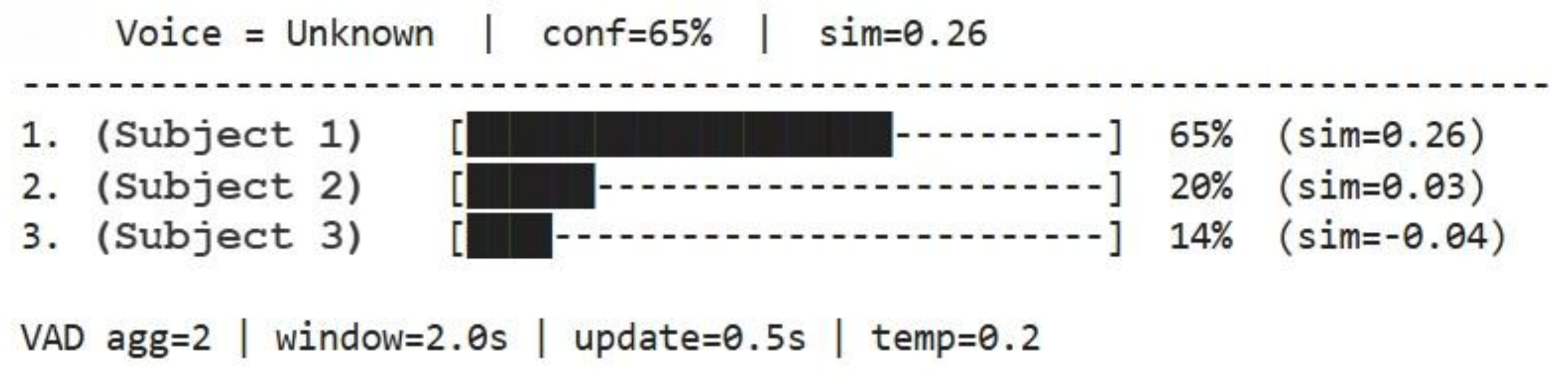


Figure 4. Data Pipeline Flowchart



```
    Voice = Unknown  |  conf=65%  |  sim=0.26
------------------------------------------------------------
1. (Subject 1)    [███████████████----------]  65%  (sim=0.26)
2. (Subject 2)    [█████--------------------]  20%  (sim=0.03)
3. (Subject 3)    [███----------------------]  14%  (sim=-0.04)

VAD agg=2 | window=2.0s | update=0.5s | temp=0.2
```

Figure 5. Example Output of Live Speech Recognition Test

RESULTS

Phase 1:

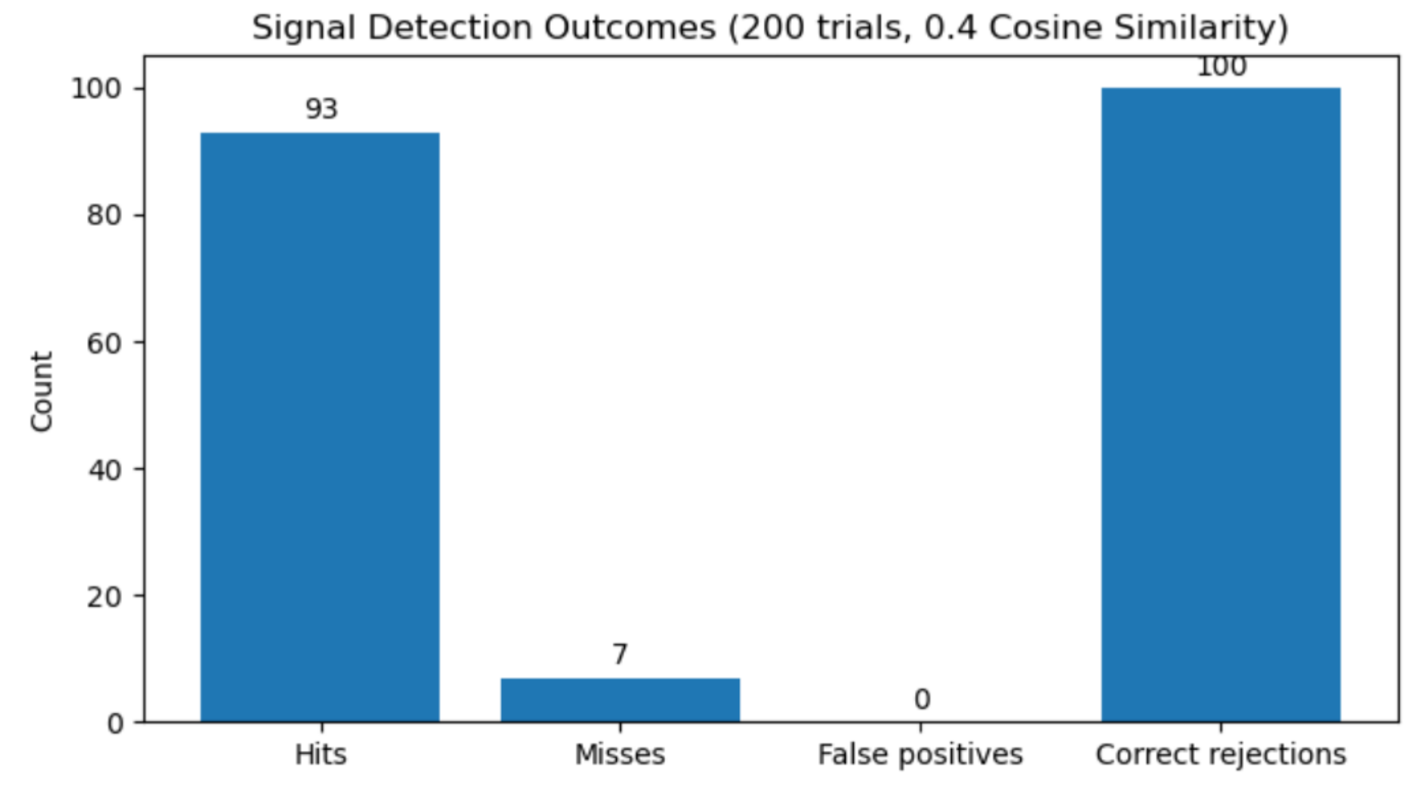


Figure 6. Signal Detection Outcomes

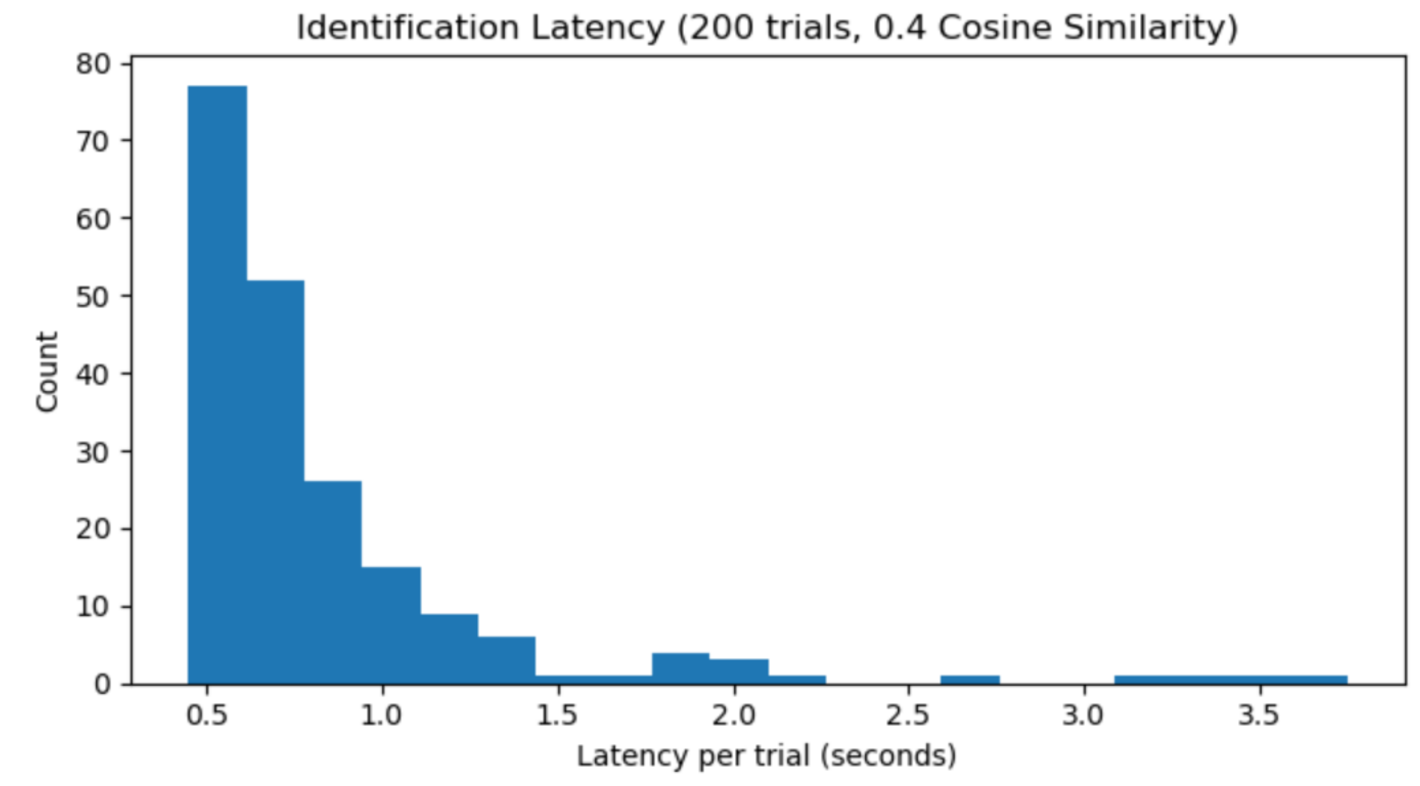


Figure 7. Latency Per Audio Sample

Phase 2:

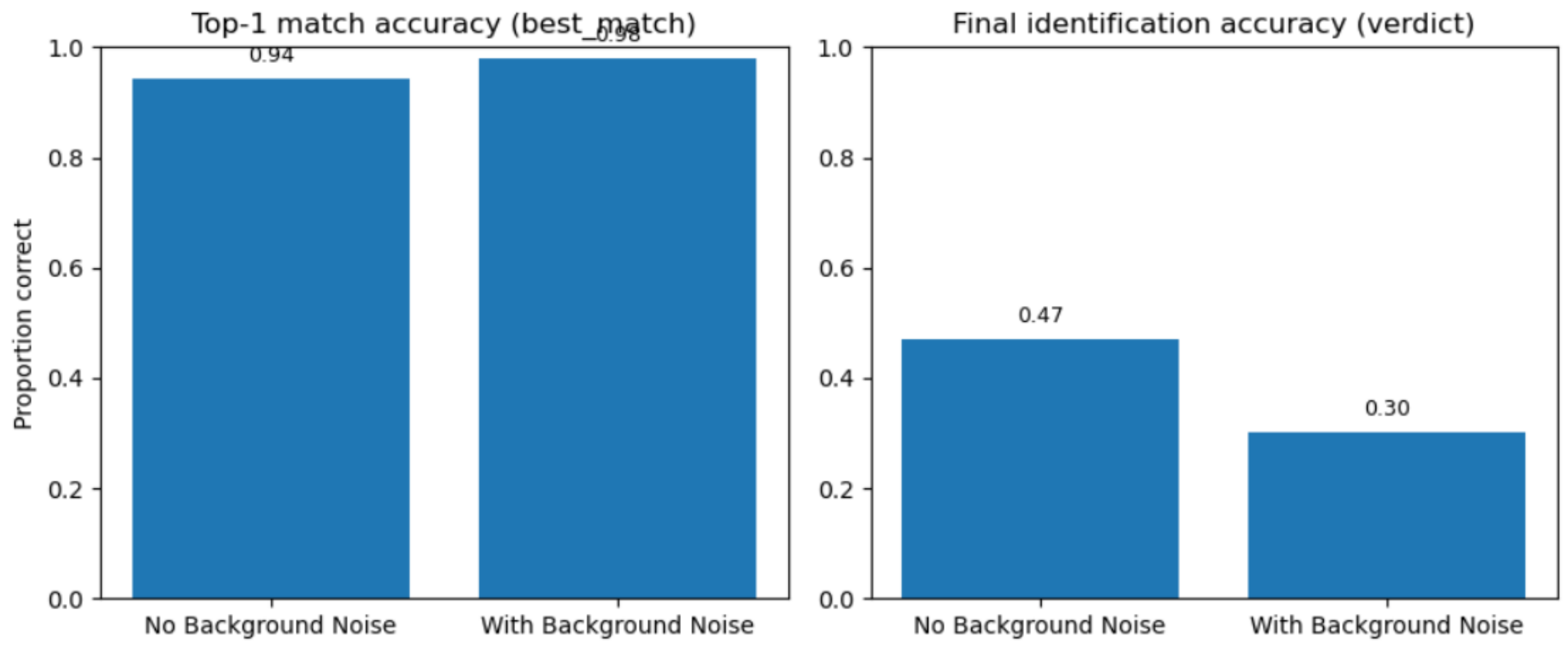


Figure 8. Best Match, Final Verdict Accuracy

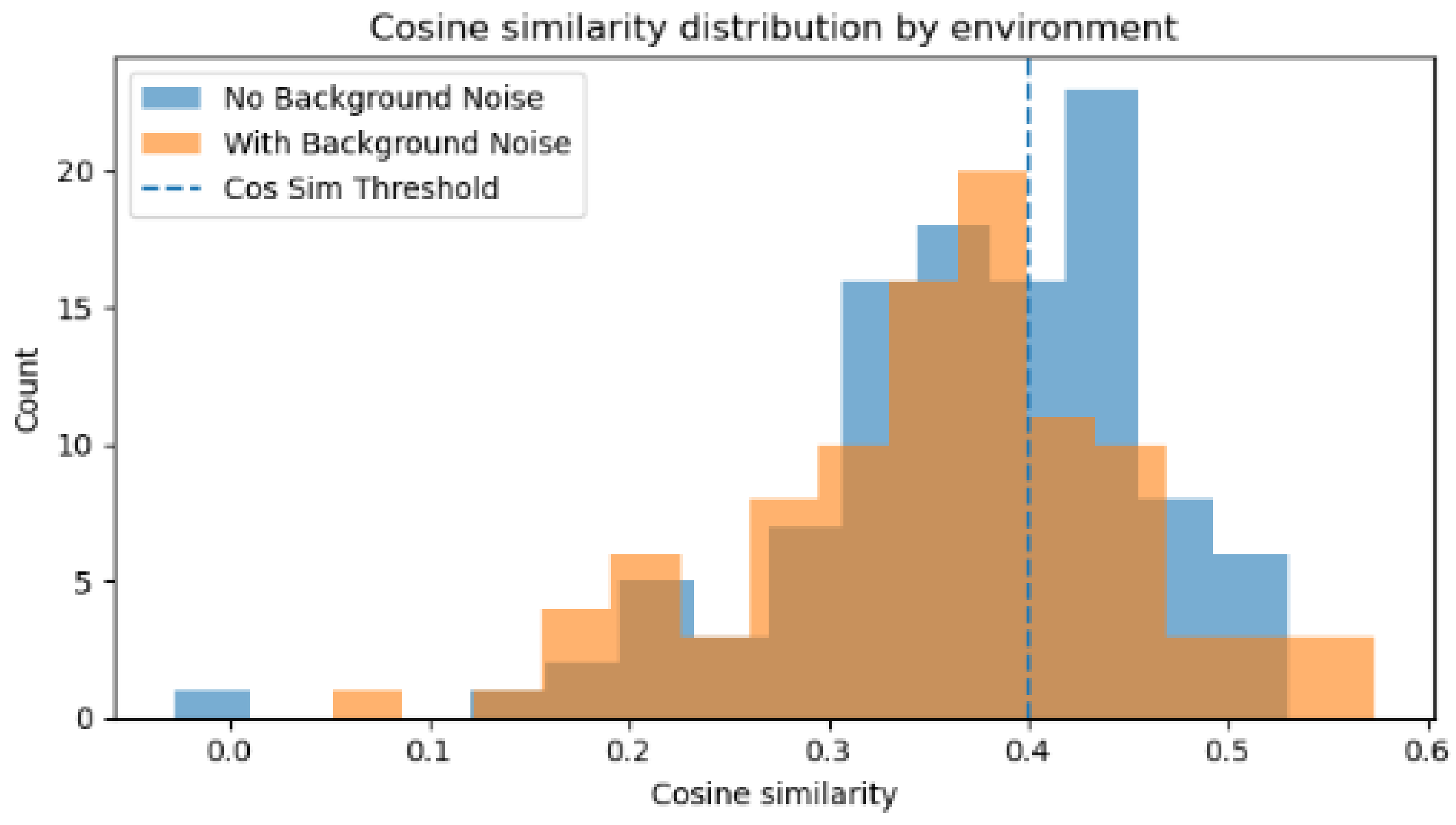


Figure 9. Audio Sample Cosine Similarity Distributions

CONCLUSION AND FUTURE WORK

Speech-based real-time doxxing may be a feasible threat in certain scenarios, particularly with minimal background noise and close proximity between threat actor and target.

Future Work:

- Larger sample size
- More live test data
- Variation of artificial background noise to model different environments