Introduction

Speech technology is very useful, but speech identifies the speaker
Speaker identification imperils the privacy of the users

- *Pseudonymization* by voice conversion can obscure identity effectively
- Mainly evaluated on *Intelligibility*, *Naturalness*, and *Privacy protection*
- How does pseudonymization affect other aspects of speech?

 *Emotion, Mental state, Disorders, Clinical markers of disease . . .*

  Question:
  Is *pseudonymized* speech useful in applications
  that go beyond speech recognition?

Case study: Measure voice quality in pseudonymized speech

43 speakers with laryngeal tumors, recorded before&after treatment

- Pseudonymized to 3 target speakers using a generic algorithm
- 8 acoustic parameters of voice quality measured:
  AVQI, CPPs, HNR, Slope, Tilt, Jitter, Shimmer (%), Shimmer (dB)

Correlation between values from *Original* and *Pseudonymized* speech

Discussion & Conclusions
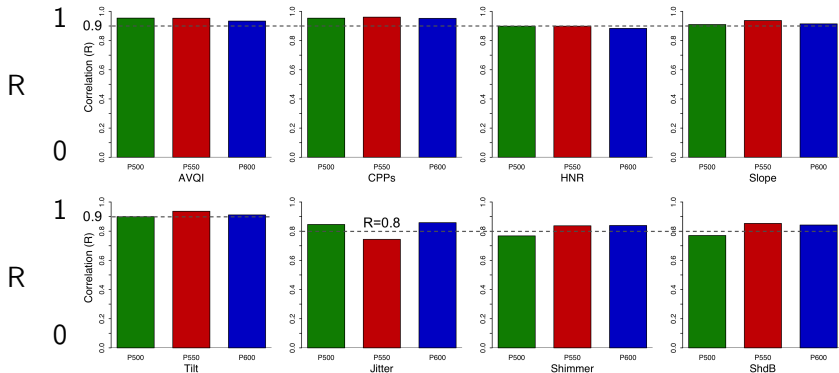
Voice Quality after using a generic pseudonymization algorithm

- $R^2 \gtrsim 0.80$ and low errors for: *AVQI, HNR, CPPs, Slope, & Tilt,*
- $R^2 \sim 0.65$ and higher errors for: *Jitter, Shimmer, & ShdB*
- Errors have weak dependence on the severity of dysphonia
- $\Rightarrow$ *Voice Quality* can be measured on pseudonymized speech
- $\Rightarrow$ Select pseudonymization algorithm to fit the task for the best results