



THE SOURCE OF THE HUMAN VOICE

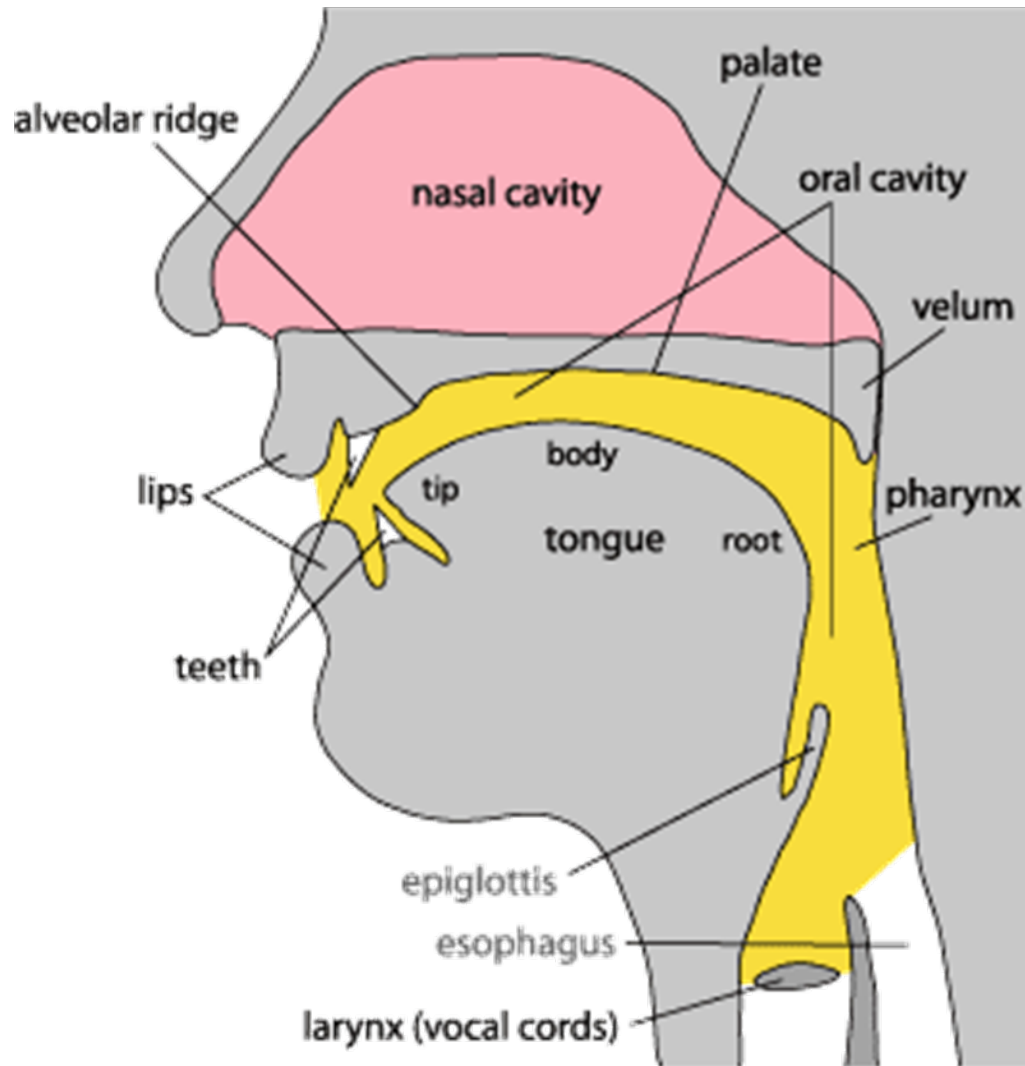
A MOUTHFUL OF SCIENCE AND TECHNOLOGY

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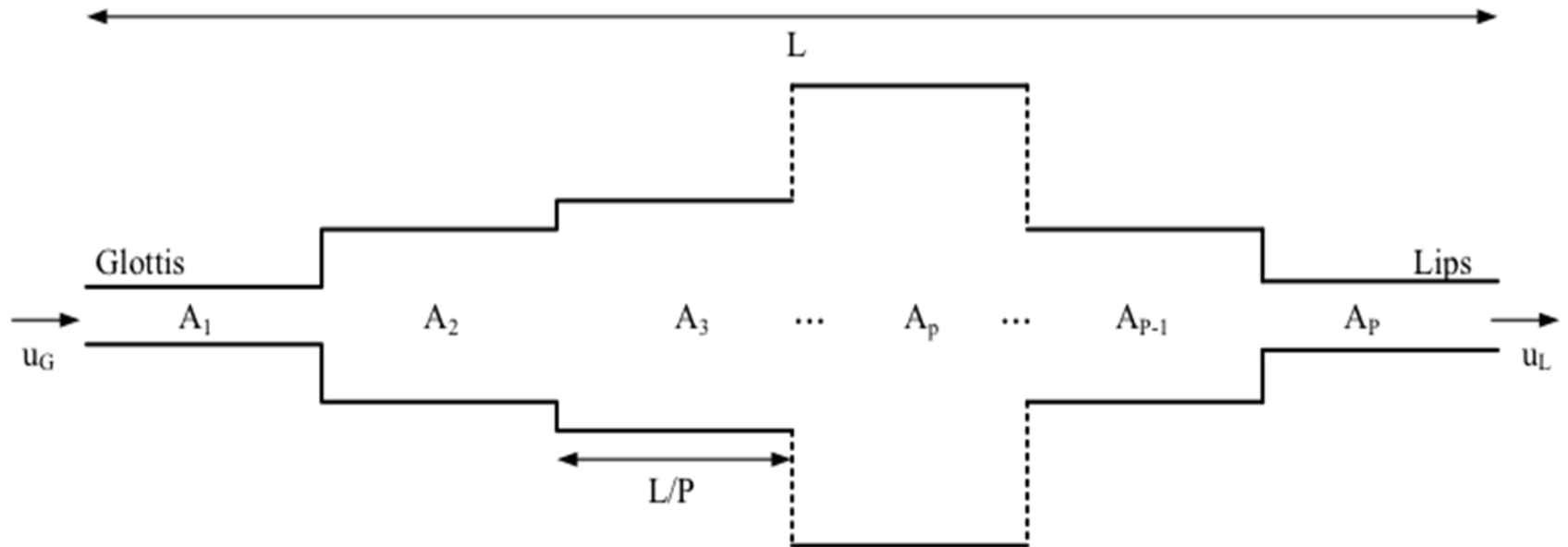
Speech Applications

- Speech coding
- Speech enhancement
- Speaker recognition
- Speech synthesis
- Speech recognition
- ... others!

The vocal apparatus



The lossless tube model



$$V(z) = \frac{z^{-P/2} K_V}{1 - \sum_{p=1}^P a_p z^{-p}}$$

The voice source



The voice source

$$s(n) = u_d(n) + \sum_{k=0}^p a_k s(n - k)$$

