# FSLT
# Speech
# Some Applications

Jürgen Trouvain

# Symbolic Annotations & Dictionaries

- Pronunciation dictionaries
  - language learner
  - language researchers (dialectology, for experimental set-ups, diachronic comparisons)
  - professional speakers (e.g. from media)
  - speech technology (synthesis & recognition)
- Annotation of speech corpora
  - searchable databases
  - segmental and prosodic symbols combined with linguistic and multi-modal events

# Language Learning

- electronically available teaching material
  - symbolic representations
  - audio files
  - computer-animated visualisations
- computer-assisted pronunciation training
  - part of CALL (comp.-assisted language learning)
  - diagnosis tools such as evaluation of fluency

# Medical Applications

- Databases
  - databases with pathological and healthy voices (`e.g. www.coli.uni-saarland.de/stimmdatenbank`)

- Diagnosis of speech pathologies
  - tools for measurements e.g.electropalatography, electroglottography
  - software specialised for voice pathologies

- Therapeutical support
  - tools for visualisation and feedback control of articulation, e.g. immediate pitch tracking, SpeechTrainer

# Speaker Recognition

- Forensic phonetics
  - speaker recognition by comparing voices of two recordings
  - speaker authentification

- Biometrical applications
  - speaker verification as user-specific access
  - often combined with other biometrical data

- Dialogue systems
  - speaker classification (e.g. age group)

# Speech Synthesis

- see Marc Schröder's slides :-)
- various application scenarios
  - limited domain speech output (e.g. talking clocks, public transport information, language tutor)
  - unlimited text-to-speech (e.g. car navigation, for the blind, SMS-to-speech, in computer games)
  - speech output in dialogue systems (e.g. in call-centers, time-table information, in-car-control of information services )

# Automatic Speech Recognition

- see slides of Dietrich Klakow

# Automatic Dialogue Systems

- see speech synthesis slides
- main problems
  - user adaptivity
  - unnatural speaking
  - "no fun"-experience

# Examples for own research

- Using speech and language technology
  - ultra-fast synthetic speech as used by blind
- Useful for speech and language technology
  - Talk-in-interaction vs. read speech

More information:
`www.coli.uni-saarland.de/~trouvain`