



Automatic Speech Recognition

In Translation and Interpreting

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CONTENTS

- ▶ General thoughts on ASR
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- ▶ ASR and interpreting
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GERNERAL THOUGHTS

- ▶ ASR most studied discipline in NLP (with MT)
- ▶ Important thinkers of future developments worked in ASR, e.g. Kurzweil (director of engineering by Google)
- ▶ ASR not only acoustic, but also language models
- ▶ ‘normal’ ASR considered sort of ‘solved’ in research, now focus on:
 - ▶ accented speech, impaired people (Shor et al. 2019)
 - ▶ optimization of Real-time Continuous Transcription, e.g. small memory footprint, on-device, low latency (He et al. 2019)

GERNERAL THOUGHTS

- ▶ Revolution started in ~2012 with NN-ASR
- ▶ Learning by exposure to real life examples
- ▶ Similarities to human learning
- ▶ Low error rates
- ▶ User independent

TRANSLATION

- ▶ ASR ubiquitous, however mainstream translation tools are not taking advantage of it (Teixteira/Moorkens 2018)
 - ▶ Human-machine interaction supported by ASR (interactive translation dictation environments)
 - ▶ Dictation of translation
 - ▶ Preparation of text for translation (audio-video files)

TRANSLATION

- ▶ Advantages in terms of productivity (Ciobanu 2016, Zapata et al. 2017)
- ▶ Voice input is regarded as a useful feature by translators (Texteira 2019), but:
 - ▶ Error rates (e.g. need to adapt way of speaking)
 - ▶ Less ergonomic for non continuous dictation (single words, editing)

INTERPRETING

- ▶ ASR-supported Computer-assisted interpreting tools
- ▶ Live monitoring of the input to extract Unit of Interests (Fantinuoli 2017)
 - ▶ Terminology
 - ▶ Numbers
 - ▶ Named Entities
- ▶ Continuous display of Units of Interest
- ▶ Use of prediction algorithms to detect when interpreters need suggestions (Vogler et. Al 2019)



INTERPRETING

- ▶ Good quality for SI triggers (Brüsewitz, 2019)
 - ▶ Numbers: 84%
 - ▶ Terminology: 92%
 - ▶ Named Entities: 75%
- ▶ First experimental results are encouraging in terms of interpreter performances (DeFrancq et al. 2018, Prandi 2018), but:
 - ▶ Sometimes felt as distraction
 - ▶ Need of dedicated training

LIVE SUBTITLING - CONVERGING PATHS

- ▶ INTERLINGUAL RESPEAKING, production of real-time subtitles where a respeaker translate what is heard and speaks it into ASR to create caption text. Form of ASR-supported hybridization of translation and interpretation
- ▶ “The ideal person for the job would be someone who is a qualified interpreter and a professional subtitler” (den Boer 2001)

FUTURE PERSPECTIVE

- ▶ Quality of ASR is mature and supposed to increase
- ▶ ASR-adoption means change in professional landscape
 - ▶ Need of empirical studies to “measure” advantages/disadvantages in the professional workflow
- ▶ In combination with MT and TTS, ASR allows first forms of ‘usable’ machine interpreting
 - ▶ Need to prepare profession and stakeholders to this new ‘presence’

Mockrát děkujeme!
Σας ευχαριστούμε πολύ!
Muito obrigado! Go raibh maith agaibh!
Vielen Dank! Multumesc!
Nuoširdžiai dėkojame! Najlepša hvala!
Благодаря! Köszönjük szépen!
Merci beaucoup! Grazie mille!
Dakujeme vám veľmi pekne! Hartelijk dank!
Tack så mycket! Kiitos! **Thank you!**
Liels paldies! Nirringrazzjawk ħafna!
Hvala lijepa! Muchas gracias!
Dziękujemy za uwagę!
Mange tak!