Machine Translation of Medical Text in the KConnect Project

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KCONNECT

Introduction

- KConnect is a follow-up project of Khresmoi
- goals: provide components developed in Khresmoi as commercialized cloud services
- role of MT: provide cross-lingual search and access to medical documents
  - search queries
  - document summaries

Training Data

- new languages:
  - Swedish, Spanish, Polish, Hungarian
- in-domain corpora collected and processed
  - UMLS, EMEA, MuchMore, Wikipedia, PatTR, COPPA, Mesh, subtitles,...

Training Data: Statistics

	parallel		monolingual only	
	in-domain	general domain	in-domain	general domain
cs	21	665	1	93
de	126	310	4	699
es	74	1248	2	474
fr	193	896	2	589
hu	19	641	1	98
pl	17	606	1	205
sv	24	409	21	158
en	–	–	6087	2100

Training data sizes, all figures are in millions of words.

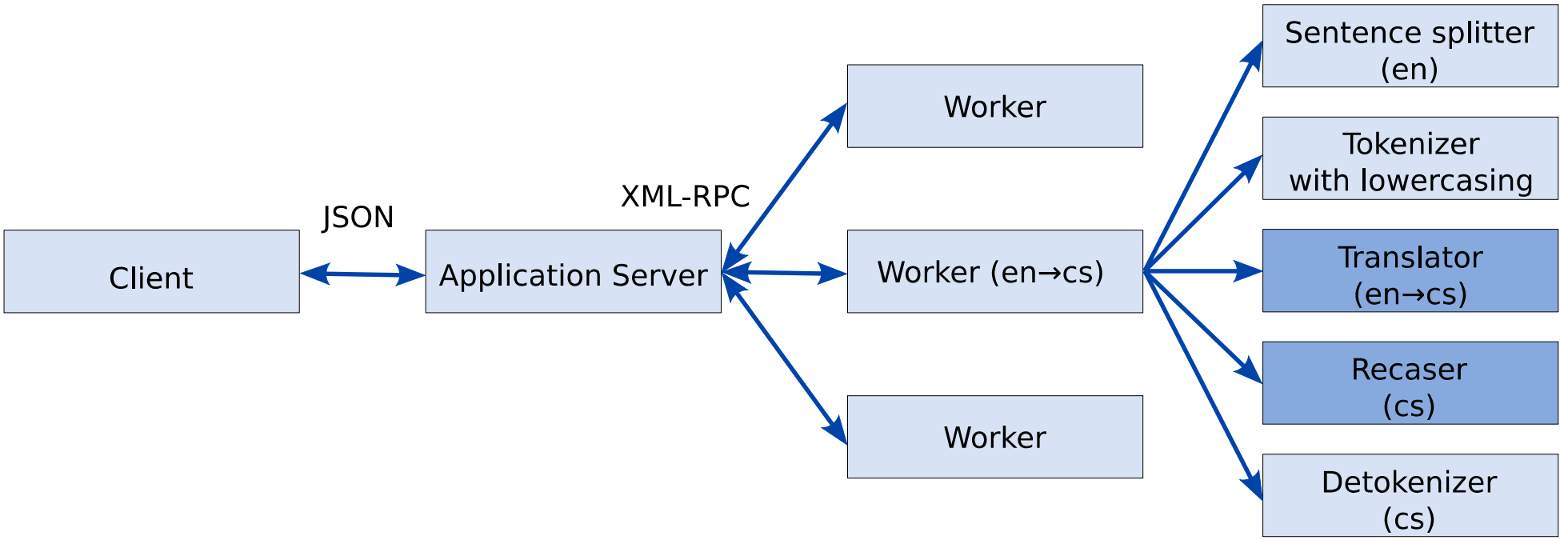
Domain Adaptation

- Data selection
  - divide data into „medical-like“ and „general“ parts

    (based on language model perplexity)
- Model interpolation
  - build separate models (phrase table, language model) for each part
  - use linear interpolation to combine them
    - SRILM
    - TMCombine

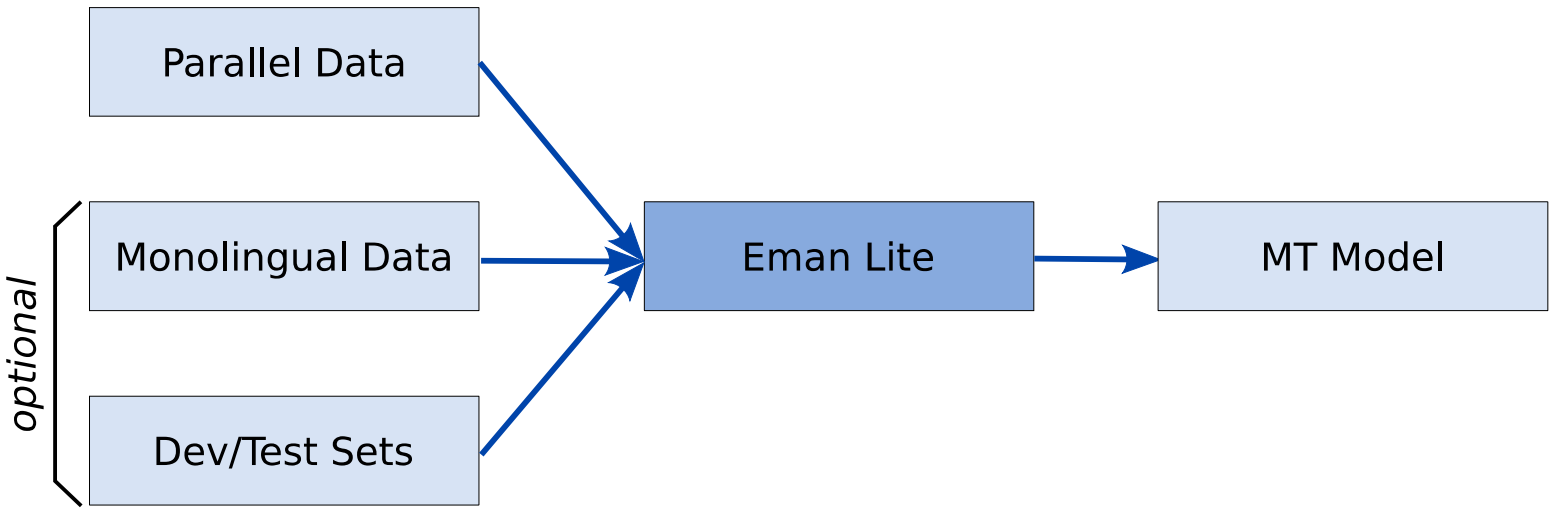
MT as a Web Service

- MTMonkey
- developed within Khresmoi, now actively extended and maintained
- runs in a cluster of 20 servers



Training Toolkit

- Eman Lite
- fully automated MT system training
- command-line application implemented
- goal: web-based interface, tight integration with MTMonkey



Thank you!

Questions?