

An aerial photograph of a coastal region, likely the Baltic Sea area, showing a grid of latitude and longitude lines. The land is brownish and textured, with several large, irregularly shaped water bodies in shades of light blue and white. The text is overlaid on the lower part of the image.

PANEL INTRODUCTION
AKRR'08

Timo Honkela
Helsinki University of Technology

Cognitive architectures for multimodal multilinguality

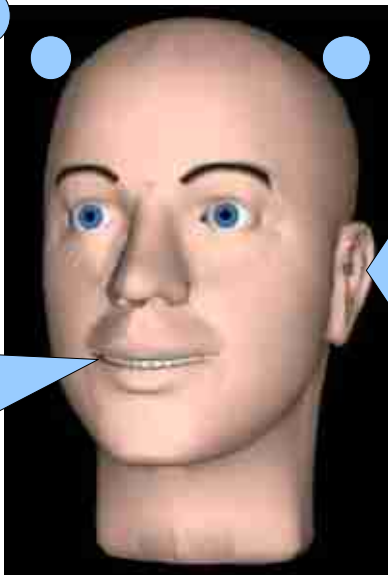
AKRR08



- Applications in machine translation and information retrieval/search
- Methodology based on cognitive systems and adaptive systems (statistical machine learning) research



A tentative objective: high proficiency of spoken and written languages in **context**...



Czech Republic is one of the few inland countries whose borders can be seen from satellite photographs.

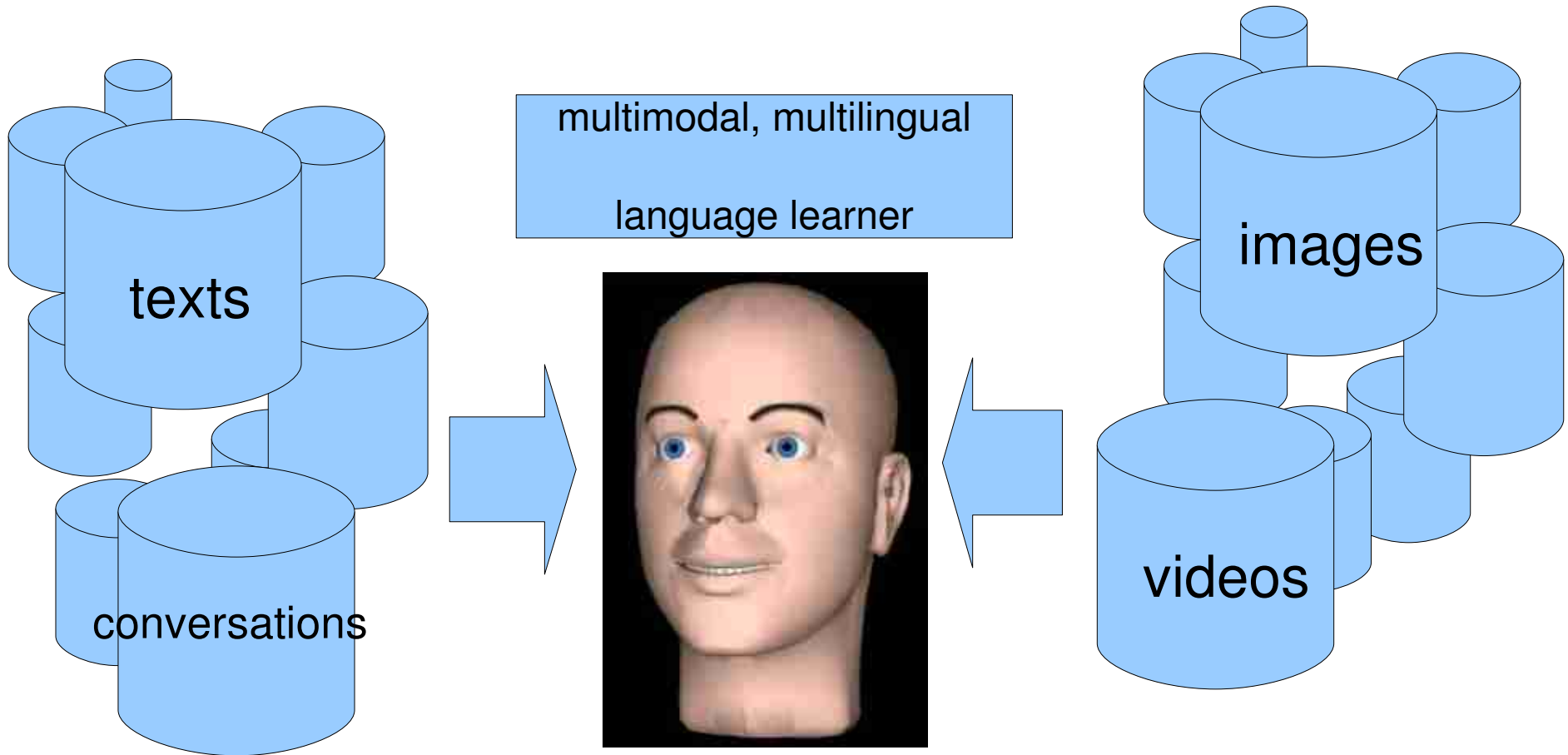
Česká republika je jedním z mála vnitrozemských států, jehož obrysy lze rozeznat na satelitních snímcích.

http://www.czech.cz/vite_ze/

<http://www.lce.hut.fi/publications/>

[annual2002/node18.html](http://www.lce.hut.fi/publications/annual2002/node18.html)

... learned using vast data collections
and rich contexts



Desired properties

AKRR08

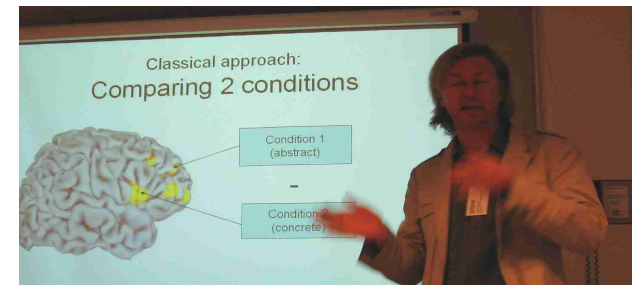
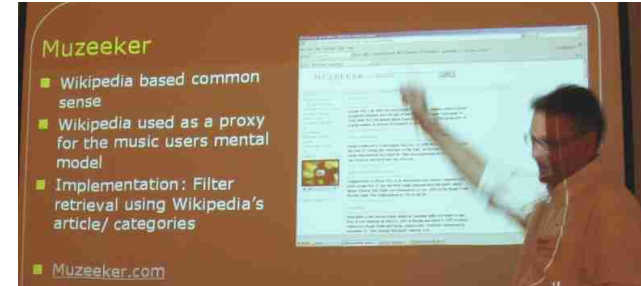


- Representation of world knowledge
 - symbol grounding
 - multimodality (and its relation to translation)
- Learning from mistakes
- Support for communication

Resources / methods

AKRR08

- Broader use of freely accessible content
 - e.g. monolingual corpora
- Various kinds of semantic networks and treebanks as data (not as “ground truth”)
- Use of crowd sourcing
 - image labeling – availability of current resources?
 - translations
 - feedback
- Contribution of brain research?
 - empirical data



Background questions

AKRR08



- “Human behavior project” (cf. Hansen)
- Nature of representation?
Representation versus process?
- Relationship between language understanding and language learning
- What kind of cognitive architecture?

Organizing ourselves

AKRR08



- Collaboration between EU projects and national projects
- Network of Excellence in Adaptive Language Technology