A New Finnish Text-to-Speech Synthesizer

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- A text-to-speech system based on Festival architecture and existing linguistic analysis tools: e.g., TWOL (Lingsoft), FDG (Conexor).
- New methods for handling non-standard words (NSW)
- New prosody models for Finnish – duration, intonation, pause prediction
- New diphone voices for Finnish – one male and one female
Partners

• Scientific partners are
  • University of Helsinki, Department of General Linguistics
  • University of Joensuu, Department of Foreign Languages

• Industrial partners are
  • Alma Media
  • Finnish Federation of the Visually Impaired
  • Lingsoft, Inc.
  • PT-Controlnet
  • Sonera Solutions Ltd.
A global view of the architecture

"text"

Pre-processing

Linguistic analysis
TWOL | FDG

Normalization

Festival synthesis

speech
Text analysis: numbers

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<th>Word</th>
<th>Syllable</th>
<th>Segment</th>
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<td>5</td>
<td>viiden</td>
<td>1 0</td>
<td>v i: d e N k i l o n</td>
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<tr>
<td></td>
<td>kg:n</td>
<td>1 0</td>
<td>k i l o n</td>
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<tr>
<td></td>
<td>säikki</td>
<td>1 0</td>
<td>s ä k: i</td>
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</tbody>
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5 abbr sg gen n nom sg
Text analysis: one part abbreviation

ABR:<SM>
VAR:() () <SM> () ()
CTX:hyphenate
TOP:sports
FUL:suomenmestaruus
MID:
BAS:listed-letters
EXA:
Text analysis: two-part abbreviation

ABR: <dipl.ins.>
VAR: () () <dipl.> () (ins.)
CTX: two-part
TOP: position, academic
FUL:
MID: <diplomi=insinööri> non-inflecting
BAS: <dipl ins> non-inflecting
EXA:
"Se on kumma, että dipl.ins. Mönkkönen voitti mm. SM-kultaa, halli-ME pronssia ja MM-hopeaa, mistä kerrottiin Me kaksi-lehdessä."

<sentence> Se on kumma, että
<PRON SUB="diplomi=insinööri" RULE="sng-NoCtx">dipl.ins.</PRON> Mönkkönen voitti
<PRON SUB="muun=muassa" RULE="sng-NoCtx">mm.</PRON> ,
<PRON SUB="ääsääm=kultaa" RULE=""">SM-kultaa</PRON>
<PRON SUB="halli-ääm=ee" RULE="sng-LorBCtx">halli-ME</PRON> pronssia ja
<PRON SUB="ääm=ääm=hopeaa" RULE=""">MM-hopeaa</PRON>
<sentenc> , mistä kerrottiin Me kaksi-lehdessä.