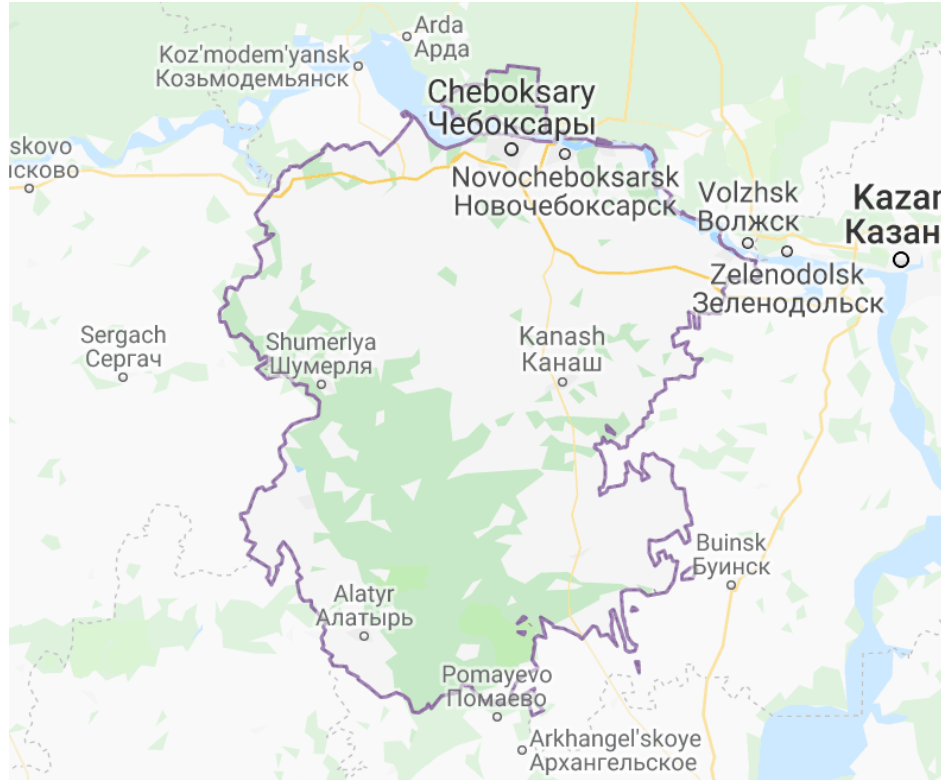# Speech Synthesis for the Chuvash Language

Dante Razo

LING-L 445

Background

– Chuvash is a minority language spoken by roughly one million people in European Russia

– Turkish language that utilizes the Cyrillic alphabet

– This project aimed to train popular speech-synthesis systems and compare them

What is Speech Synthesis?

– Speech synthesis is the production of artificial human speech

    – e.g. Bloomington Transit & IU buses, Google Assistant, Amazon Alexa

– Text-to-speech (TTS) is a subset of speech synthesis

    – Self-explanatory name

    – e.g. Microsoft Sam, NOAA Severe Weather Alerts, Stephen Hawking

Speech Synthesis Systems

- Used:
  - Ossian & Merlin
- Attempted:
  - eSpeakNG
  - Mozilla TTS
  - Mozilla LPCNet
- Considered:
  - Festival

Corpora & Repositories

Corpora:

- *Turkic_TTS* by Francis M. Tyers (ftyers)
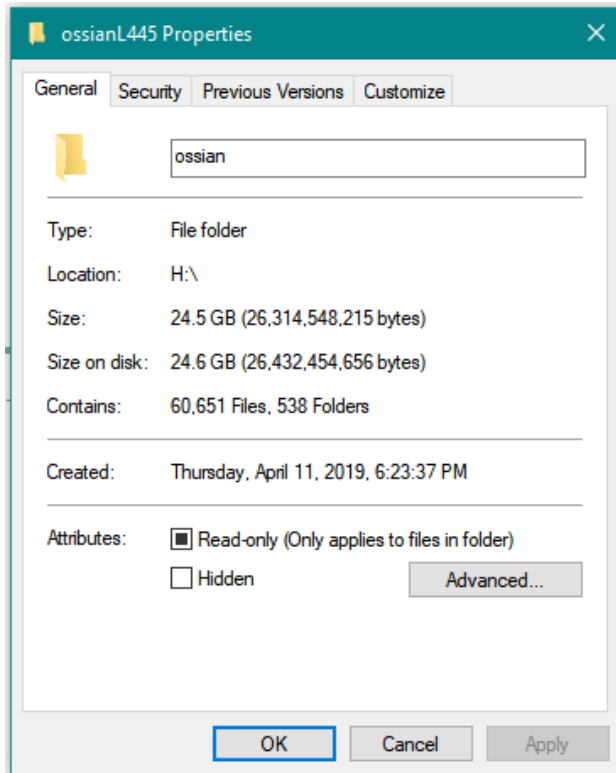
- *Apertium-chv* (GPL-3.0) by Apertium (apertium)

Repositories:

- *eSpeakNG (-cv)* by Harry Zhang (contextualist)

- *Mozilla TTS* (MPL-2.0) by Mozilla (mozilla)

- *Ossian* (Apache-2.0) by CSTR Edinburgh (cstr-edinburgh)

- *Mozilla LPCNet* (BSD-3) by Mozilla (mozilla)

Ossian & Merlin

Training Ossian

eSpeakNG

Configuring eSpeakNG

Model Evaluation & Results

Example

- "Ытти чĕлхесемпе пĕрлех ку хатĕрте чăваш чĕлхи валли те вырăн тупăннă"

  - From *apertium_chv* corpus **(/texts/cvorg-commonvoice.txt**, line 2)

References

Russian Bureau of Statistics: Владение Языками Населением Российской Федерации [*Population of the Russian Federation by Languages*]

http://www.gks.ru/free_doc/new_site/perepis2010/croc/Documents/Vol4/pub-04-05.pdf

Wikipedia: Speech Synthesis

https://en.wikipedia.org/wiki/Speech_synthesis

Wikipedia: Chuvash Language

https://en.wikipedia.org/wiki/Chuvash_language

Special Thanks

– Harry Zhang

– And viewers like you

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