

HW1 : Getting familiar with ASR and evaluation

In this homework, you are asked to use Web Speech API implemented in Chrome in a dictation task and to evaluate its performance. Follow the instruction.

- 1) Place the web page (together with its dependencies) in the archive file named “HW1 web speech API resources” (containing html, css and js files) posted in the material section on a web server. If you cannot make the web page work, use the page at <https://www.cvdef.com/2017-2-2143231/>.
- 2) Design and run a dictation experiment in which speakers uttered (saying) each of the utterance in the table below to the speech recognizer in 1) at least twice. We leave the number and gender of the speakers, as well as other factors, to be up to your experiment design. Take note of the exact recognition results.

Utterance #	Transcription
1	One thing Mark Zuckerberg has consistently excelled at is destroying his enemies.
2	Google Plus is no longer viewed as a threat to Facebook.
3	Now, Zuckerberg is turning his focus to a new enemy.
4	On Thursday, Facebook announced a major change to News Feed to prioritize posts from friends over posts from publishers.
5	Even if it ends up helping Facebook's public image, there are other risks.
6	Artificial intelligence programs built by Alibaba and Microsoft have beaten humans on a reading comprehension test.
7	The technology can be gradually applied to numerous applications.
8	The Stanford test generates questions about a set of Wikipedia articles
9	Beijing said it wants the country to be a leader in artificial intelligence.
10	North and South Korea are discussing fielding a joint ice hockey team.

- 3) Construct a table showing the result of the experiment. Design the table appropriately so that it is easy to compare the recognition results and their actual transcription.
- 4) Calculate “Utterance recognition accuracy” as well as “Word recognition accuracy”. Clearly show and explain how the two accuracies were calculated.
- 5) Discuss whether the recognition results portray any tendencies for causes of errors. Try to categorize errors into types and explain the causes or challenges associated with recognition errors of each type.

Write a report of your dictation experiment (You may write the report in Thai). The report must contain the following sections.

- Detailed experiment instruction. (Precisely describing how the experiment was conducted E.g.: How many speakers there are, what relevant factors are etc.)
- Experiment results (as described in 3 and 4))
- Discussion of the results (as described in 5))

and attach a PDF file in the corresponding attachment slot of this assignment.

Grading of this homework will be based on the thoroughness of how you designed / conducted the experiment, the clarity of writing and presenting data, the correctness of the accuracy calculations, and the quality of your discussion.