SYNTH CHALLENGE 2019

Sound and Musical Instrument Synthesis Competition
Using Software Environment MATLAB

Competition Assignment:

a) Musical instrument synthesis of one of the following compositions using MIDI files:

    i) *Karel Svoboda* **"Tři oříšky pro Popelku" ("Three nuts for Cinderella")**. The attached file popelka.mid consists of a flute, a grand piano, a bassoon and strings.

    or

    ii) *Benny Andersson & Björn Ulvaeus* **"Waterloo,"** using a MIDI file waterloo.mid, which consists of choral singing (vocal A), a grand piano, a trumpet, and guitars.

b) Three octaves of the Major music scale, consisting of all the synthesized musical instruments, eventually followed by the sound of percussion instruments.

c) An arbitrary realization of own audio synthesis using the MATLAB environment (non-musical sounds are also accepted).
The arbitrary composition may consist of various sounds including synthesis of fully synthetic instruments (e.g., A theremin, A Hammond's organ, sounds of FM synthesizers, and others) and common sounds of everyday life.
For the composition enhancement, it is possible to use different effects such as reverb, echo, chorus, stereo, and others.

Competition Rules:
a) **All the audio synthesis algorithms have to be programmed in the MATLAB environment**
b) For the composition use your own or freely distributable MIDI files
c) Use a MIDI toolbox (version 2.0) as a MIDI files type 0 to MATLAB interpreter
    • function main.m contains examples of the solo instrument and polyphony synthesis
    • your own synthesis should be included in the file synth.m, in which the instrument functions may be written
    • the MIDI files used for synthesis has to be included in the midi folder
    • output synthesis files *.m4a have to be included in the result folder
d) Output audiosynthesis files will be in the *.m4a format
e) The final version should be submitted via email synthchallenge@fel.cvut.cz before **31.12.2019, 24:00**:
    • all the source files of the synthesis in the format *.m
    • used source MIDI files *.mid
    • the output files of the three syntheses *.m4a
    (mandatory composition, musical scale, arbitrary composition)
    • a report containing the description of used techniques of the audio synthesis and references
f) Output synthetic files (*.m4a) provided by competitors will be published on the web page
g) The announcement of the competition results will be held on the Wednesday **8th of January, 2020**.

synthchallenge@fel.cvut.cz
http://sami.fel.cvut.cz/synthchallenge2019/
Source files for download: MIDI Toolbox 2.0, popelka.mid, waterloo.mid