Intelligent software assigns appropriate background music for pictures

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Newly developed software called Picasso succeeds in arranging pictures with appropriate compositions in an instant, by utilizing the technical skills of movie directors. Credit: bellhäuser - das bilderwerk

Previously, setting a picture or whole series of pictures to suitable music required expert knowledge and a great deal of time. Newly developed software called Picasso succeeds in arranging pictures with appropriate compositions in an instant, by utilizing the technical skills of movie directors. Scientists at the Cluster of Excellence on "Multimodal Computing and Interaction" at Saarland University developed the software, and they will present the program with its associated smart phone app "PicasSound" at the Cebit computer expo. Cebit will take place from the 6th through the 10th of March at the fairground in Hanover, Germany.

"Usually, directors select consistent melodies for a particular movie scene," explains Sebastian Michel, head of a junior research group at the Cluster of Excellence at the Saarland University. He designed the Picasso software together with Ph.D. student Aleksander Stupar. The program utilizes the expertise of movie producers in assigning appropriate [background music](#) for pictures, enabling users to select music that will harmonize with their impressions of their last summer vacation without putting in an extraordinary amount of effort.

A three-level [algorithm](#) carries out the elaborate process. First, the picture the user has chosen is compared with a huge database of movie scenes and their corresponding soundtracks. The software creates a ranking of the scenes that look most similar to the user's picture. This database was compiled by the two researchers Michel and Stupar by splitting 50 movies into screenshots and their accompanying soundtracks. In the next step, the software creates a list of the selected tracks. And finally, the total number of tracks gets reduced to a few selections through a mathematical calculation; these are at last proposed to the user.

Here, a list of suggestions makes sense because particular pictures bring up different associations for different users, according to Michel. "Some people might connect a picture of a little house surrounded by an idyllic landscape with a romantic weekend for two, while others might think about loneliness," Michel explains.

Interested people can experience the software on the demo website and get an idea of Picasso's hit rate. Or they can use the free smartphone app "PicasSound," which is programmed to pick out an appropriate soundtrack using the music which is already saved on the smartphone. It is free available for the mobile operating systems iOSX and Android.

Next, Michel and Stupar will try to expand the [software](#) system to

support automatic sound recording of audiobooks on a textual basis. Furthermore, the researchers are planning to integrate a function inside the system that will take the individual preferences of the users into account.

  More information: Online demo of the Picasso software, including videos, for free use: picasso.mmci.uni-saarland.de/demo/
Personal website of Sebastian Michel: qid3.mmci.uni-saarland.de/people/sebastian.html

Provided by Saarland University