

22. DATA MANAGEMENT, DATA MINING AND MEDIA TECHNOLOGIES FOR COMMUNITIES

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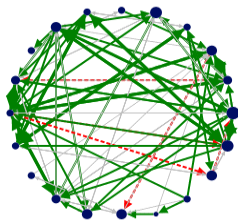
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We are working on laying the foundations for small community media using the latest available technologies such as smartphones, the mobile internet, big data and data mining. The primary goal is strengthening viable communities, supporting their self-organization on a practical level and promoting community members' mental health. Multidisciplinary cooperation with media experts, sociologists and psychologists as well as close cooperation with several communities allow us to concentrate on the technical issues while also focusing on our primary goal.

Technically, the following areas are covered:

Audio data, i.e. speech and music play a central role in our approach. New challenges, such as mixed speech and music playlist generation are to be met (pure music playlist generation has been extensively handled over the past few years in the IEEE and ACM literature). There is also cooperation with the human language technology group.

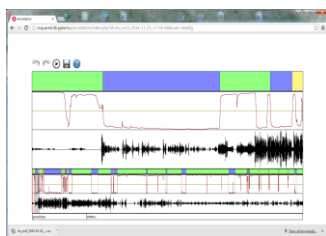
Scalable database management and data mining approaches are required both for (a) analysing media content, (b) customizing the data based on individual profiles and on actual context information utilizing value-based (or dual goal) and serial recommender systems, (c) analysing usage patterns, (d) investigating data on personal connections and travel trajectories.



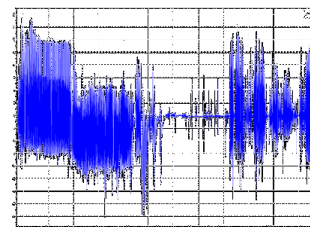
(a) Social network data



(b) Trajectory data on persons' journeys



(c) Mixed speech-music playlist



(d) Sensor data

Fig. 1 Data sources/forms related to audio media for communities

PUBLICATIONS

- [1] Jani, M.: "Fast Content Independent Playlist Generation for Streaming Media," in *12th ACS/IEEE International Conference on Computer Systems and Applications AICCSA 2015*, Marrakech, Morocco (2015) To appear.
- [2] Hunyady M., Lukács G., Oláh A.: „Vehicle-Relative Positioning System,” *NetMob The main conference on the scientific analysis of mobile phone datasets*. Boston, U.S., 7-10 April 2015.
- [3] Benyeda, I., Jani, M., Lukács, G.: "Natural Language Processing for Mixed Speech-Music Playlist Generation," in *Proc. of XI. Magyar Számítógépes Nyelvészeti Konferencia, MSZNY 2015*, Szeged, Hungary (2015) 257–268.
- [4] M. Jani, G. Lukács, and Gy. Takács, "Experimental Investigation of Transitions for Mixed Speech and Music Playlist Generation," in *Proceedings of ACM International Conference on Multimedia Retrieval*, Glasgow, United Kingdom, 2014, pp. 392–398.
- [5] G. Lukacs, D. B. Pethesné, and B. Madocsai, "Impact of Personalized Audio Social Media on Social Networks," in *XXXIII. Sunbelt Social Networks Conference of the International Network for Social Network Analysis Abstract Proceedings*, Hamburg, Germany, 2013, p. 210.