COST Action CA15212
Citizen Science to promote creativity,
scientific literacy, and innovation throughout Europe

ITC Conference Grant: Scientific Report

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ITC Conference Grant

Scientific Report

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Activities during your attendance at this conference

During the **15th International Conference on Advances in Mobile Computing and Multimedia (MoMM2017) from 4 to 6 December 2017**, held in Salzburg, Austria. I have presented the research paper **"Bayesian Network Model for Estimating User Satisfaction of Multimedia Cloud Services"** in the conference session Mobile Services and Applications.

This paper describes how the increased contribution to the rapid development of Information Communication Technology (ICT) has contributed significantly to the increased number of smart services those are available to end users. In this way, the computing is been transformed into a model consisting of a set of IT services that are delivered in a manner similar to traditional utilities. These cloud services are enablers for greater mobility and flexibility in the use of cloud-based services. Furthermore, they provide a higher degree of cooperation, communication, and sharing of resources, and builds a personalized mobile environment. The Quality of Experience (QoE) has been introduced to measure the quality features, which is able to determine the end-to-end user-perceived quality of the used multimedia service. In this study, we have used student's satisfaction survey, which provides direct subjective data on need, habits, and frequency of using different multimedia services. The accurate assessment of the perception of quality of services and applications by cloud service providers will offer greater control over the quality of the delivered notifications and achieves well management of services.

After presenting the paper there have been a couple of questions that raise the interest of the participants for the proposed Bayes-based model for estimating the quality of multimedia cloud services.
Within, the same session has been presented publications that consider the urban public taxi transportation problems that citizens face in the everyday life. Furthermore, there have been presented global and regional mainstream approaches for personalized music recommendation.

In MoMM 2017 conference, I have found out how the practical usage of mobile sensory technology for mathematics education can be integrated. The researchers from Universitat Politècnica de València from Spain have proposed an efficient way to tune smartphone for an accurate ambient noise assessment. In that way, smartphones can do sound capture and sound processing, determining the impact of different noise calculation approaches on the noise estimation accuracy. Their idea was to propose to use citizens smartphones as an environmental sensor to measure noise pollution.

Another paper presented at MoMM 2017 was dealing with noise-sensing using smartphones. The main challenge was to determine the right moment for activating the microphones of smartphones as sensors, in order to be used to create noise level maps for metropolitan areas. In particular, they have addressed the issue of measurement accuracy and representativeness with commercial smartphone microphones. In their future work, they plan to integrate our proposal into a full crowdsensing architecture to achieve distributed noise measurements.

The MoMM 2017 conference allowed me to establish collaboration with researchers in the field of quality estimation of different services.

Impact on your research and future collaborations

The presented research paper has provided a clear understanding of the quality formation process and features that contribute to the perception of quality. This research is strongly related to the general objective of the **COST Action CA15212** WG 5 "Improve data standardization and interoperability", in a sense that will identify the main mechanisms for standardization, interoperability, and quality control. In this manner, the development of Quality of Experience model and the proposed prediction techniques provides benefit for understanding and improving the quality of Citizen Science. The survey data that has been used for validation of the proposed Bayesian Network model for interactive estimation of the acceptability of multimedia cloud services based on the user preferences. Based on the accuracy of the proposed model, we have been able to confirm the relations between the influencing factors that affect the perception of quality and it contributes to predicting multimedia content using the QoE metric.

Another presented project in the MoMM 2017 conference was MAiThE (Mobile Apps to improve ThErapy) developed by researchers Escola Superior de Tecnologia - IPS from Portugal, which addresses important societal challenges. This project was focused on the deployment and study of personalized mHealth apps to provide patients and carers with self-management capabilities to help them feel empowered in their ability to find strategies in a more informed and collaborative way and to optimise therapy outside the clinical context, with remote support from health practitioners.