Editorial: Smart Objects and Technologies for Social Good (GOODTECHS 2016)

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1 Editorial

By social good we refer to a “good” or a service that benefits the largest number of people in the largest possible way. Some classic examples of social goods are, of course, healthcare, safety, environment, education, democracy, and human rights, but we can add to this classic list even communication, art, entertainment and much more.

In this context, the popularity of portable computing devices, like smartphones, tablets, or smart watches combined with the emergence of many other small smart objects with computational, sensing and communication capabilities coupled with the popularity of social networks and new human-technology interaction paradigms is creating unprecedented opportunities for each of us to do something useful, ranging from a single person to the whole world. Furthermore, Internet of Things, Smart-cities, distributed sensing and Fog computing are representative examples of modern ICT paradigms that aim to describe a dynamic and globally cooperative infrastructure built upon objects’ intelligence and self-configuring capabilities. These connected objects are finding their way into our pockets, vehicles, urban areas and infrastructure, thus becoming the very texture of our society and providing us the possibility, but also the responsibility, to shape it.

This special issue features six selected high quality papers, best papers from the GOODTECHS 2016 which have been further improved and extended. The first article “On the correlation between heart rate and driving style in real driving scenarios” analyzes the correlation between the driver’s heart rate and her/his behavior. The study is based on the design and

use a novel architecture that combines new technologies such as smartphones and wearable body sensors with modern software implementations of artificial neural networks.

The second article, entitled “Consumer-oriented Head Mounted Displays: Analysis and evaluation of stereoscopic characteristics and user preferences”, presents an analysis of the stereoscopic characteristics of a commercially-available Head Mounted Display. The authors highlight main visualization characteristics in relation with the known issues and requirements for a correct stereoscopic visualization and establish some preliminary guidelines for an optimal creation of stereoscopic contents. The article also includes a comparison of the stereo parameters of the considered HMD with the visualization setup typical of a 3D monitor.

The IoT scenario is expected to change the way we live and work through its potential to be pervasive in almost every aspect of a human life and thanks the constantly growing number of interconnected physical objects. In this sense, the third article entitled “Standards, Security and Business Models: Key Challenges for the IoT Scenario” considers the IoT scenario exposing how its fragmentation might compromise its successful deployment. Presented issues regard the unorganized proliferation of communication technologies, the absence of end-to-end security solutions and the lack of solid business models. The authors provide a simulation analysis emphasizing issues and suggesting future research directions.

The fourth article is entitled “Evaluation of structural and temporal properties of ego networks for data availability in DOSNs” and presents an analysis of the temporal behaviour of users and of the communities of a real Online Social Network to understand how these issues can affect the data availability in Distributed OSN. The main goal is to define proper strategies to allocate the users’ data on the DOSN nodes. To this aim, the authors present an analysis of the temporal affinity and the structure of communities and their evolution over the time by using a real Facebook dataset.

Smart mobility is a key element to support citizens in their daily activities and to offer them a livable smart city even in

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terms of accessibility. The authors of the fifth article “Integrating personalized and accessible itineraries in MaaS ecosystems through microservices” designed and prototyped an infrastructure as a marketplace for mobility services in order to manage information about urban transportation, urban barriers and facilities, pedestrian multimodal paths, travel planning and experience, as well as payments.

The last article entitled “Social Network Based Crowd Sensing for Intelligent Transportation and Climate Applications” investigates a combination of data mining techniques with statistical analysis to identify popular topics in a social network, study the relationship between weather conditions and traffic congestion and identify causes of citizens’ negative emotions. The authors demonstrate it is possible to use social networks to crowd sense the weather conditions and traffic congestion in a city. This represents a promising way to discover latent relationships between various activities in a smart city and to find out the causes of citizens emotional status.

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