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Einat Minkov joined the Information Systems department at University of Haifa in 2010. Her Ph.D degree is from the Language Technologies Institute, Carnegie Mellon University. Before joining the University of Haifa, she was a member of the research staff at Nokia Research. Her main research interests include text mining, information retrieval and semantics.

Dr. Silvio Nocera is a tenured Assistant Professor of Transportation at the Department of Architecture and Arts of IUAV University of Venice. He received his Ph.D in Transportation from the Technical University of Munich, and is also accredited as Associate Professor of Applied Economics. His research interests span economic evaluation of transport systems, external costs of transportation, big data and transportation, demand responsive transport systems, logistics, intelligent transport systems, and transit quality.

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Using Cellular Data to Analyze Spatial Activity: The Case of the Tel Aviv Metropolitan CBD

Eyal Ashbal, Igal Charney and Eran Razin

In this paper we use cellular network data to examine spatial activity. So far, the majority of data on spatial activity such as commuting and travel for leisure and shopping purposes were based on census and/or survey data. Normally, data was based on a limited number of participants and the time interval between data collection and its release for research resulted in a time gap between actual identification of a phenomenon and its analysis. Using data stored in smartphones is of great potential for research and application in the planning discipline. In this paper we use data obtained from a start-up company that monitors the activity of cellular network data in Israel. This type of big data enables the identification of place-of-residence and activity patterns of smartphone users. By focusing on the metropolitan CBD of Tel Aviv, we analyze the spatial activity of visitors and provide empirical evidence for well-recognized but ill-documented processes.

Eyal Ashbel has a Ph.D in Economic Geography from the Geography Department at the Hebrew University, Jerusalem. He specializes in Integrated Land use Transportation Models, Geographic Information Systems, application of innovative technologies and Big Data for research and planning. He was formerly Chief Analyst at "Trendit". Currently he is Head of the Transportation Department at PGL Transportation Engineering and Planning Ltd.

handled, in order to ensure this arena as a credible information source of sufficient quality for decision-making processes.

This paper provides an overview of the different categories of social media, the characteristics of its content and how these characteristics are reflected in transport-related posts, and in deriving the goals for harvesting transport-related information from social media. Transport-related examples from Israeli social media sources are demonstrated in order to provide evidence for the relevancy of these insights to the local transport sector. Recent relevant literature is reviewed, and an explanatory case study focusing on Tweets posted by travelers to and from specific sports events is elaborated. The explanatory case study combines domain knowledge relevant to the transport sector with existing text mining techniques. The results demonstrate both the volume and pertinence of the information obtained.

In order to reveal the tip of the iceberg of the gaps still to be closed in order to realize the full potential of social media as an information source for improving transport planning and operation, a review of the challenges this approach holds for the transport sector is given. These include ontologies, sentiment analysis and location names. The contribution of this paper is in scoping the potential benefits and the challenges in mining social media data within the transport context, and in exploring directions for further research in this field.

Ayelet Gal-Tzur has been a researcher at the Technion's Transportation Research Institute (TRI) since 1994, and leads the mobility management research team. She is involved in applicative research projects for local transport authorities and international projects, mainly within the framework of EU research programs. Her main research interests are the use of ICT for promoting sustainable transport and innovative information sources for improving decision-making processes in transport. Gal-Tzur is also the head of the Industrial Engineering and Management department at the Ruppin academic center.

Dr. Susan Grant-Muller is a Senior Lecturer at the Institute for Transport Studies, University of Leeds. Her research is at the multidisciplinary interface between digital technologies and transport under a low carbon energy future. Her specific interests are in the role of new technologies in sustainable transport paradigms, Big Data, Social Media and Mobility, the design of Incentives Schemes for behaviourally orientated demand management, and the resilience of ICT enhanced transport.

Prof. Zvi Kopelik is the chair of the information systems department at the University of Haifa. He joined the University of Haifa in 2004 and since then his research focuses mainly on user modelling and intelligent user interfaces, using freely available information from the internet and social media, as was done in this work.

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environment. Buildings are characterized in terms of land-use, floor-space and value. Agents are characterized in terms of income and socio-demographic attributes and are allocated to buildings. Simple behavioral rules and a dynamic house pricing system inform residential location preferences and land use change, yielding a detailed account of urban spatial and temporal dynamics. These techniques allow for the bottom-up formulation of the behavior of an entire urban system. Outputs relate to land use change, change in capital stock and socio-economic vulnerability. Delivering the data to planners and the informed public is facilitated through a dedicated dynamic mapping web site.

Daniel Felsenstein is a Professor in the Department of Geography and Director of the Center for Computational Geography, Hebrew University of Jerusalem. His research interest include economic geography, spatial econometrics and urban simulation. He serves as a consultant to the OECD in the area of local employment and economic development.

A. Yair Grinberger is a Ph.D student at the Department of Geography, the Hebrew University of Jerusalem. His research interests include spatial behavior, urban dynamics, GIS and agent-based simulation.

Dr. Michal Lichter is an expert in spatial data processing and analysis, Geographic Information Systems (GIS), Spatial Databases, Web-GIS and dynamic visualization of spatial data. Her work focuses on processes in the natural and human environments and the interactions between them.

Can We Learn Route Users' Needs from Social Media Content?

Ayelet Gal-Tsur, Zvi Kopelick, Einat Minkov, Itai Shor, Susan Grant-Muller and Silvio Nocera

Information flow plays a central role in the development of transport policy, transport planning and the effective operation of the transport system. The role of social media data as a novel source for enriching and supplementing information flow in various sectors of society is constantly growing. Consequently, its potential to broaden and improve the information required to meet the needs of transport planners, operators and policy makers has been recently investigated, and the outcomes of these initial research efforts are promising. However, many challenges stemming mainly from the unstructured nature characterizing a large portion of social media data are still to be