

Final Program

Monday, November 29		
08:00 – 08:30		
Registration		
08:30 - 09:00		
GEOINFO´2010 Opening and Welcome Session Auditorium		
S1 – Mobility Data Analysis		
09:00 – 09:30	Looking inside the Stops of Trajectories of Moving Objects.	Bruno Neiva Moreno, Valéria Cesário Times, Chiara Renso, Vania Bogorny
09:30 – 09:50	Definição de uma gramática dos conceitos relacionados a Movimento e Mudança em objetos espaço-temporais.	Leila Weitzel, Cirano lochpe
09:50 – 10:10	Um algoritmo para identificar padrões comportamentais do tipo <i>avoidance</i> em trajetórias de objetos móveis.	Alisson Loy, Vania Bogorny, Chiara Renso, Luis Otavio Alvares
S2 – Databases		
10:10 – 10:40	Using MDA and a UML Profile integrated with international standards to model geographic databases.	Filipe Nalon, Jugurta Lisboa Filho, Karla Borges, José Luís Braga, Marcus Andrade
10:40 – 11:10	Towards intelligent analysis of complex networks in spatial data warehouses.	Sergio Vieira, Renato Fileto, Andre Furtado, Ricardo Guembarovski
11:10 – 11:20		
Coffee Break		

11:20 – 12:40 Invited Talk 1

Dr. Fosca Giannotti

Information Science and Technology Institute of the National Research Council at Pisa, Italy

Mobility, data mining and privacy: mining human movement patterns from trajectory data

The technologies of mobile communications and ubiquitous computing pervade our society, and wireless networks sense the movement of people and vehicles, generating large volumes of mobility data, such as mobile phone call records and GPS tracks. This is a scenario of great opportunities and risks: on one side, mining this data can produce useful knowledge, supporting sustainable mobility and intelligent transportation systems; on the other side, individual privacy is at risk, as the mobility data contain sensitive personal information. A new multidisciplinary research area is emerging at this crossroads of mobility, data mining, and privacy. The talk assesses this research frontier from a data mining perspective, and illustrates the results of a European-wide research project called GeoPKDD, Geographic Privacy-Aware Knowledge Discovery and Delivery. GeoPKDD has created an integrated platform named M-ATLAS for complex analysis of mobility data, which combines spatio-temporal querying capabilities with data mining, visual analytics and semantic technologies, thus providing a full support for the Mobility Knowledge Discovery process. In this talk, we focus on the key data mining models: trajectory patterns and trajectory clustering, and illustrate the analytical power of our system in unveiling the complexity of urban mobility in a large metropolitan area by means of a large scale experiment, based on a massive real life GPS dataset, obtained from 17,000 vehicles with on-board GPS receivers, tracked during one week of ordinary mobile activity in the urban area of the city of Milan, Italy.

12:40 – 14:00

Lunch

S3 – Semantics in GIS

14:00 – 14:30	An ontological gazetteer for geographic information retrieval.	Ivra Majorie Machado, Rafael Alencar, Roberto Campos-Jr, Clodoveu Davis-Jr
14:30 – 15:00	Using semantic similarity to improve information discovery in spatial data infrastructures.	Fabio Andrade, Cláudio Baptista
15:00 – 15:30	A geographic annotation a service for biodiversity systems.	Fabiana Gil, Nadia Kozievitch, Ricardo Torres
15:30 – 16:00	Interacting with Spatial Data Warehouses through Semantic Descriptions.	Renato Deggau, Renato Fileto, Danilo Pereira, Eugenio Merino

16:00 – 16:20

Coffee Break

16:20 – 17:30 Round Table***Semantic Issues on Geographic Information Science***

This roundtable will present to the GeoInfo audience an overview of current issues on spatial semantics, including issues related to Semantic Reference Systems, Semantic Web and Semantic Annotation.

- Dra. Claudia Bauzer de Medeiros – UNICAMP
- Dr. Frederico Fonseca – The Pennsylvania State University
- Dr. Gilberto Câmara – INPE
- Dr. Marco Antonio Casanova – PUC-Rio
- Dr. Werner Kuhn – ifgi

19:00 – 20:00**Welcome reception**

Tuesday, November 30

S4 – Spatial Data Infrastructures

08:30 – 09:10	INDE - A Infraestrutura Nacional de Dados Espaciais Brasileira	IBGE
09:10 – 09:30	Dicionário de tipos de feições geoespaciais para o território brasileiro	Ivanildo Barbosa, Marco Antonio Casanova

S5 – Modeling

09:30 – 09:50	Modelos baseados em agentes em mudanças de uso e cobertura da terra: o caso da moratória da soja em Santarém.	Talita Assis, Ana Paula Aguiar, Gilberto Câmara, Pedro Andrade
09:50 – 10:20	Change allocation in spatially-explicit models for Aedes Aegypti population Dynamics.	Raquel Martins Lana, Tiago Garcia de Senna Carneiro, Nildimar Alves Honório, Cláudia Torres Codeço
10:20 – 10:40	EpiGTA/TerraView: plug-in para simulação de enfermidades infecciosas em redes sociais com fluxo de populações.	Carolina Pena, Marcelo Costa, André Gomes

10:40 – 11:00

Coffee Break

11:00 – 12:20 Invited Talk 2

Dr. Edzer Pebesma

Institute for Geoinformatics, University of Muenster, Germany

Modelling spatio-temporal data with R

Although R provides a rich set of classes and methods for manipulating and analysing either spatial data or temporal data, classes and methods for spatio-temporal data are relatively underdeveloped. This talk will review why this is the case, how spatio-temporal data analysis has been carried out so far, which classes have been present (notably: those for trajectory data), and which problems are solved easier with a set of classes and methods for spatio-temporal data. It will do so by looking at the spacetime R package, from the perspectives of geostatistical and time series analysis, and it will try to unravel what is so special about spacetime.

12:30 – 14:00

Lunch

S6 – Geometry, Data Structures and Algorithms		
14:00 – 14:30	Heuristics to site observers in a terrain represented by a digital elevation matrix	Salles Magalhães, Marcus Andrade, Chaulio Ferreira
14:30 – 15:00	G-GCS – A Geographical Aware Graph Coupling Structure for GIS water flow representation	Sergio Rosim, Antônio Miguel Vieira Monteiro, Camilo Daleles Rennó, João Ricardo Freitas Oliveira
15:00 – 15:30	The role of digital generalization in image segmentation	Mário Pettinati, Lúbia Vinhas, Gilberto Câmara, Júlio D'alge
15:30 – 15:50	Heurística para o posicionamento de reservatórios d'água em terrenos representados por matrizes de elevação	José Souza, Keiller Nogueira, Marcus Andrade, Jugurta Lisboa Filho, Thiago Gomes
15:50 – 16:10 Coffee Break		
<p>16:10 – 17:40 Mini-tutorial 1:</p> <p style="text-align: center;"><i>Linked Open Spatiotemporal Data</i> <i>Dr. Tomi Kauppinen</i> <i>Muenster Semantic Interoperability Lab – University of Munster</i></p> <p>Linked Open Data is an approach to connect and openly publish related data that was not previously linked and was not previously openly available. Examples of such data are research and government data. In this tutorial we will discuss 1) the principles of Linked Data, 2) how to use ontologies to describe the semantics of Linked Data, and 3) how to publish Linked Data on the Web. Space and time are fundamental and crucial dimensions in Linked Data. Thus we will concentrate especially on how to link and open spatiotemporal data.</p>		
<p>16:10 – 17:40 Mini-tutorial 2:</p> <p style="text-align: center;"><i>Spatiotemporal Data Handling in R</i> <i>Dr. Edzer Pebesma</i> <i>University of Munster</i></p> <p>Continuing the topic of the Invited Talk, we will develop some hands-on experience by going through exercises to import, manipulate, and visualize spatial, temporal and spatio-temporal data. Workshop participants are invited to bring their own spatio-temporal data, to try and find out which functionality is useful, and which is missing, or where it can potentially be found.</p>		
20:00 – 22:00 Barbecue Party		

Wednesday, December 1		
S7 – Applications		
09:00 – 09:30	Low-cost satellite-based products for the Web - the Example of Fire Web Service,	Theodor Foerster, Thore Fechner, Holger Fritze, Frederik Loock, Albert Remke
09:30 – 10:00	Integrating business processes into GIS-based Simulations,	Marcelo Metello, Eduardo David, Marcelo Carvalho, Marco Casanova
10:00 – 10:20	Proposta de planejamento em etapas para redes secundárias de telecomunicações	Hideson Alves da Silva, Luiz Eduardo Soares de Oliveira, Alceu S. Britto Jr.
10:20 – 10:40	Sistemas de geoinformação: tendências em tecnologias para o acesso e interação de tomadores de decisão	Carlos Alberto de Carvalho, Maria Cecília Calani Baranauskas, Evaristo Eduardo de Miranda
10:40 – 11:00		
Coffee Break		
11:00 – 11:30	Report of Geochange Symposium	Edzer Pebesma, ifgi Werner Kuhn, ifgi
11:30 – 12:00		
Closing Session		