



LBS 2014

11th Symposium on Location-Based Services
Vienna, 26–28 November 2014

Program

Wednesday, 26 November 2014

9:30 ☐ **Conference Opening** Vice Rector Adalbert Prechtl (TUWU), Georg Gartner (ICA), Chris Rizos (IAG), Volker Schiewer (FIG), Jochen Schiewe (DGfK), Markus Jobst and Haosheng Huang

10:00 ☐ **KEYNOTE** The Role of LBS and Visualization in Digital Mobility Liqiu Meng

30 minutes coffee break

Wayfinding and Navigation I

11:00–12:15 Chair: Martin Raubal

11:00 ☐ **Visualization and Communication of Indoor Routing Information**

Jukka M. Krisp, Mathias Jahnke, Hao Lyu and Florian Fackler

11:15 ☐ **Visualizing Distant Off-screen Landmarks on Mobile Devices to Support Spatial Orientation**

Rui Li, Amichi Korda, Maurin Radtke and Angela Schwering

11:30 ☐ **Using Split Screens to Combine Maps and Images for Pedestrian Navigation**

Dirk Wenig, Stefan Brending, Nina Runge and Rainer Malaka

11:45 ☐ **Comparing Indoor and Outdoor Network Models for Automatically Calculating Turns**

Ann Vanclooster, Nico Van de Weghe, Veerle Fack and Philippe De Maeyer

12:00 ☐ **A Computational Method for Indoor Landmark Extraction** Hao Lyu, Zhonghai Yu and Liqiu Meng

90 minutes lunch break

Wayfinding and Navigation II

13:45–14:55 Chair: Karl Rehr

13:45 ☐ **Is OSM Good Enough for Vehicle Routing? A Study Comparing Street Networks in Vienna**

Anita Graser, Markus Straub and Melitta Dragaschnig

14:00 ☐ **Calculating Route Probability from Uncertain Origins to a Destination**

Carolin von Groote-Bidlingmaier, David Jonietz and Sabine Timpf

14:15 ☐ **Personalized Routing for Car Navigation Systems** Jukka M. Krisp, Andreas Keler and Nicole Karrais

14:25 ☐ **Towards a Dedicated Data Model for Seamless Pedestrian Navigation**

Lucia Tyrallová, Carolin Kucharczyk, Lasse Scheele and Hartmut Asche

14:35 ☐ **Indoor Signposting and Wayfinding through an Adaptation of the Dutch Cyclist Junction Network System** Antigoni Makri and Edward Verbree

14:45 ☐ **Context-aware Navigation Model Supporting Way-finding for Vision Impaired People in Indoor Environments** Nimalika Fernando, David A. McMeekin and Iain Murray

35 minutes coffee break

LBS Applications

15:30–17:05 Chair: Jukka M. Krisp

15:30 ☐ **A Space Time Alarm** Adrian Corneliu Prelipcean, Falko Schmid and Takeshi Shirabe

15:45 ☐ **Linear Location-Based Services** Peter Kiefer, Martin Raubal, Tabea Probst and Hansruedi Bär

15:55 ☐ **SmartLiving – LBS and Social Media for Comprehensive Democratic Positions in Urban Development** Matthias Drilling, Stella Gatzju-Grivas, Timo Huber, Ruth Röhm, Hans-Jörg Stark, Holger Wache and Robert Wüest

- 16:05 ☐ **LBS-based Dilemma Zone Warning System at Signalized Intersection**
Yi Li, Junhua Wang and Lanfang Zhang
- 16:15 ☐ **ATSSS: An Active Traffic Safety Service System in Pudong New District, Shanghai, China**
Hangbin Wu, Chun Liu, Junhua Wang, Lianbi Yao, Shuhang Zhang, Yi Li, Zhengning Li, Cheng Liu and Shouen Fang
- 16:25 ☐ **Speed-Up Heuristics for the Traffic Flow Estimation with Gaussian Process Regression**
Thomas Liebig
- 16:35 ☐ **Location Based Asset Management Application for Railway: AMS-R**
Mohd Shoab, Kamal Jain and Mesapam Shashi
- 16:45 ☐ **Reverse Service Area Analysis of Styrian Hospitals based on OpenStreetMap Data**
Gregor Zahrer, Clemens Strauß, Gernot Hollinger and Florian Schögl
- 16:55 ☐ **Mobile Geo-marketing Solutions at WiGeoGIS** *Sirpi Manohar*

 [Join our icebreaker party – sponsored by WiGeoGIS](#)

Thursday, 27 November 2014

- 9:00 ☐ **KEYNOTE** **LBS and ITS: Some Challenges and Opportunities for the Fields of Precise Positioning and Geodesy** *Chris Rizos*

Positioning I

 9:30–10:30  Chair: Volker Schwieger

- 9:30 ☐ **A New Method for Improving Wi-Fi Based In-door Positioning Accuracy**
Yuntian Brian Bai, Suqin Wu, Guenther Retscher, Allison Kealy, Lucas Holden, Martin Tomko, Aekarin Borriak, Bin Hu, Mark Sanderson, Hong Ren Wu and Kefei Zhang
- 9:45 ☐ **On The Feasibility of Using Two Mobile Phones and WLAN Signal to Detect Co-Location of Two Users for Epidemic Prediction** *Khuong An Nguyen, Zhiyuan Luo and Chris Watkins*
- 10:00 ☐ **3D Indoor Location on Mobile Phones Using Embedded Sensors and Close-range Photogrammetry** *Xiujuan Li, Yan Zhou and Hanjiang Xiong*
- 10:15 ☐ **Application of the Inertial Navigation System 3D-Self-Calibration-Method for the Minimization of the Measurement Uncertainty** *Enrico Köppe, Daniel Augustin, Tabea Wilk, Andreas Subaric-Leitis, Achim Liers and Jochen Schiller*

 30 minutes coffee break

Crowdsourcing and VGI

 11:00–12:30  Chair: Stefan van der Spek

- 11:00 ☐ **Digging into the History of VGI Datasets: Results from a Worldwide Study on OpenStreetMap Mapping Activity** *Simon Gröchenig, Richard Brunauer and Karl Rehr*
- 11:15 ☐ **Using Location-Based Social Media for Ranking Individual Familiarity with Places: A Case Study with Foursquare Check-in Data** *Wangshu Wang*
- 11:30 ☐ **Citizens as Expert Sensors: One Step Up on the VGI Ladder** *Farid Karimipour and Omid Azari*
- 11:45 ☐ **Urban Emotions – Geo-semantic Emotion Extraction from Technical Sensors, Human Sensors and Crowdsourced Data** *Bernd Resch, Anja Summa, Günther Sagl, Peter Zeile and Jan-Philipp Exner*
- 12:00 ☐ **Collaboratively Collected Geodata to Support Routing Service for Disabled People**
Federico Prandi, Marco Soave, Federico Devigili, Raffaele De Amicis and Alkis Astyakopoulos
- 12:10 ☐ **A Localized Avalanche Risk Assessment Strategy Assisted by On-Site User-Generated Data**
Peter Mastnak, Gregor Zahrer and Clemens Strauß
- 12:20 ☐ **Crowdsourcing Energy Data for Participatory Renewable Energy Planning and Modelling**
Günther Sagl, Bernd Resch, Anja Summa, Christoph Mayer, Sen Sun and Maria Minji Lee

 75 minutes lunch break

Spatio-Temporal Data Processing and Analysis

 13:45–15:30  Chair: Takeshi Shirabe

- 13:45 ☐ **Feature Selection in Conditional Random Fields for Map Matching of GPS Trajectory**
Jian Yang and Liqiu Meng
- 14:00 ☐ **Road Network Conflation: An Iterative Hierarchical Approach**
Andreas Hackeloer, Klaas Klasing, Jukka M. Krisp and Liqiu Meng

- 14:15 ☐ **Analysing the Usage of Spatial Prepositions in Short Messages**
André Dittrich, Daniela Richter and Christian Lucas
- 14:30 ☐ **Towards Machine-based Matching of Addresses Expressed in Natural Languages**
Farid Karimipour, Ali Javidaneh and Andrew Frank
- 14:40 ☐ **Validating GPS Tracking Data with BT Scanning Registrations**
Stefan Van der Spek, Nico Van de Weghe, Edward Verbree, Wilko Quak, Tijs Neutens and Mathias Versichele
- 14:50 ☐ **Eurostat Feasibility Study: The Use of Mobile Positioning Data for Tourism Statistics**
Margus Tiru, Rein Ahas and Janika Raun
- 15:00 ☐ **Privacy Preserving Aggregation of Distributed Mobility Data Streams** *Thomas Liebig*
- 15:10 ☐ **Spatial Mobility, Social Networks and Exposure to Risk** *Rein Ahas, Janika Raun and Anniki Puura*
- 15:20 ☐ **Data Models for Moving Objects in Road Networks - Implementation and Experiences**
Milos Vojinovic, Zeljko Cvijetinovic, Dragan Mihajlovic and Momir Mitrovic

 30 minutes coffee break

Usability, Privacy, Social Aspects and LBS Development 16:00–17:25 Chair: Rein Ahas

- 16:00 ☐ **Bridging the Gap between Field- and Lab-based User Studies for Location-Based Services**
Ioannis Delikostidis, Holger Fritze, Thore Fechner and Christian Kray
- 16:15 ☐ **Challenges of Location Based Services Market Analysis: Current Market Description**
Anahid Basiri, Terry Moore, Chris Hill and Paul Bhatia
- 16:25 ☐ **GIS Liability Issues - by Example of US and Polish State of Play** *Marlena Jankowska*
- 16:35 ☐ **Providing Emancipation through Maps** *Jakub Jaňura and Jana Stehlikova*
- 16:45 ☐ **Ethical and Political Responsibility in Location Based Services — The Need of Implementing Ethical Thinking in Our Research Field** *Franz Obex and Guenther Retscher*
- 16:55 ☐ **Outdoor LBS – Relationship between Users, Providers, and Place** *Hélène Draux, Søren Præstholt, Anton Stahl Olafsson, Niels Ejbye-Ernst, Lasse Møller-Jensen, Thomas Theis Nielsen and Carsten Nielsen*
- 17:05 ☐ **Development of Location API for Tracking Continuous Non-Response Calls**
Soo-jin Lee and Yang-Won Lee
- 17:15 ☐ **All You Need Is Content — Create Sophisticated Mobile Location-Based Service Applications Without Programming** *Martin Krammer, Thomas Bernoulli and Ulrich Walder*

Conference Dinner starts at 18:30

Esterhazykeller, Haahrhof 1, 1010 Vienna. Please consult your dinner voucher for details.

Friday, 28 November 2014

- 9:00 ☐ **KEYNOTE** Abstraction as Key Element of Map Application and Services *Jürgen Döllner*

Visualization and Navigation 9:30–10:30 Chair: Markus Jobst

- 9:30 ☐ **Animated Cartographic Visualisation of Networks on Mobile Devices**
Andreas Gollenstede and Manfred Weissensee
- 9:40 ☐ **Cartographic Symbols for 3D Visualization in Facility Management Domain**
Lukas Herman, Jan Russnak, Zdenek Stachon and David Mikstein
- 9:50 ☐ **Too Simple Maps** *Karel Jedlicka and Otakar Cerba*
- 10:00 ☐ **Research on Holographic Location Map Cartographic Model**
Fenli Jia, Guangxia Wang, Jiangpeng Tian and Guomin Song
- 10:10 ☐ **Visual Demand for Maps at Different Scales of In-Route Guidance and Navigation System**
Ana Paula Marques Ramos, Edmur Azevedo Pugliesi, Mônica Modesta Santos Decanini and Vilma Mayumi Tachibana
- 10:20 ☐ **A Framework for Navigating with Map Signboards on Smartphones Using Basic and Advanced Image Geocoding Methods** *Ruo Chen Si, Masatoshi Arikawa and Min Lu*

 30 minutes coffee break

Service-Oriented Mapping

🕒 11:00–12:15 🧑🏫 Chair: Manfred Weissenegger



- 11:00 ☐ **Depending on the Others: Producing and Using Geospatial Information in Service-Oriented Architectures** *Markus Jobst*
- 11:15 ☐ **A Web, Mobile, 3D GIS as a Platform for Service Oriented Mapping**
Paul Hardy, David Watkins and Gerhard Trichtl
- 11:30 ☐ **Depiction of Multivariate Data Through Flow Maps** *Alberto Debiasi*
- 11:45 ☐ **Characterizing Potential User Groups for Versioned Geodata** *Anita Locher*
- 12:00 ☐ **Distributed Geo-processing of Streaming Data for a 3D Context Aware Visualisation Solution of a Wildfire Scenario** *Lauren Hankel, Graeme McFerren and Serena Coetzee*

🍽️ 75 minutes lunch break

Positioning II

🕒 13:30–14:55 🧑🏫 Chair: Günther Retscher

- 13:30 ☐ **Range Domain IMM Filtering with Additional Signal Attenuation Error Mitigation of Individual Channels for WLAN RSSI-based Position-Tracking** *Seong Yun Cho*
- 13:45 ☐ **A Proposal for Obtaining 3D Tracks based on Multiple Non-Geodesic GNSS**
Manuel A. Ureña-Camara, Francisco Javier Ariza-López and Antonio Tomás Mozas-Calvache
- 13:55 ☐ **High Accuracy Indoor Positioning: Multipath Mitigation Via Locata's Beam-Forming Antenna Technology** *Chris Rizos, Allison Kealy, Suelynn Choy, Yanming Feng, Nunzio Gambale and Dave Small*
- 14:05 ☐ **The Effects of Hardware and Software-based Signal Distortion in Multi-platform Indoor Positioning Systems** *Ferenc Brachmann, Ildiko Jenak, Zoltan Horvath, Tianhang Wu, Cui Xuan, Andrea Baranyi and Sandor Jenei*
- 14:15 ☐ **RFID Based 3D Indoor Navigation System Integrated With Smart Phones**
Yasin Ortakci, Emrullah Demiral and Ismail Rakip Karas
- 14:25 ☐ **Study and Simulations of an Angle of Arrival Localization System for Indoor Multipath Environments** *Stijn Wielandt, Jean-Pierre Goemaere, Bart Nauwelaers and Lieven De Strycker*
- 14:35 ☐ **Application Method for Streetview Database as Auxiliary Data to Estimate Mobile Device User's Location** *Hyungwoo Kim and Yang-Won Lee*
- 14:45 ☐ **Deterministic Indoor Detection from Dispersions of GPS Satellites on the Celestial Sphere**
Hosik Cha, Jeongjin Song, Hyuncheol Park and Cheolju Hwang

🍷 Join us for farewell drinks!



Lunch Suggestions

Lunch is not included. There are many food options in walking distance. Here are some recommendations. Find more suggestions on bit.ly/11zx4n9

- 1 Naschmarkt (international market), Wienzeile
- 2 Coffee & Bread (modern), Operngasse 24
- 3 Der Mann (bakery)
- 4 TU Mensa, Wiedner Hauptstraße 8-10, 1st floor
- 5 Korfu (Greek), Wiedner Hauptstr. 4
- 6 Nelson's (bagels, burger)
- 7 Billa (supermarket)
- 8 Point of Sale (modern), Schleifmühlgasse 12
- 9 blueorange (bagels), Margaretenstrasse 9
- 10 feinessen (modern), Wiedner Hauptstraße 19
- 11 Wiaz'haus (Austrian), Gußhausstraße 24
- 12 Salon Wichtig (curry), Karlsplatz 2

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