

LBS 2019

15th Conference on Location Based Services
Vienna, 11–13 November 2019



Monday, 11 Nov 2019

9:00 Conference Opening

Rector Prof. Sabine Seidler, Prof. Georg Gartner, Dr. Haosheng Huang

9:20 **KEYNOTE** Eye Tracking, Machine Learning and Augmented Reality for LBS – Emerging Technologies and Research Methods
Prof. Ioannis Giannopoulos

🕒 10:00–10:45 🧑 Chair: Georg Gartner, TU Wien

Mobile Cartography

10:00 **Multi-page Labeling of Small-screen Maps with a Graph-coloring Approach** (25')
Sven Gedicke, Benjamin Niedermann and Jan-Henrik Haunert

10:25 **Small Symbols With Big Effect? – A Cognitive-Affective Perspective on Map Symbolization on Small-Sized Displays** (20')
Silvia Klettner

☕ 10:45–11:15 Coffee break

🕒 11:15–12:20 🧑 Chair: Martin Raubal, ETH Zurich

Navigation and Wayfinding I

11:15 **SmarterRoutes – A data-driven and context-aware methodology for level-of-detail adaptation of navigation services** (25')
Jelle De Bock and Steven Verstockt

11:40 **Adapting the Type of Indoor Route Instruction to the Decision Point** (20')
Laure De Cock, Kristien Ooms, Nico Van de Weghe and Philippe De Maeyer

12:00 **A 3D Routing Service for Indoor Environments** (20')
Marina Georgati and Carsten Keßler

🍽️ 12:20–13:45 Lunch break

🕒 13:45–15:55 🧑 Chair: Nico Van de Weghe, Ghent University

Mobility and Activity Analytics I

13:45 **Real-time Destination Prediction for Mobile Users** (25')
Radu Marinescu Istodor, Roxana Ungureanu and Pasi Fránti

14:10 **Spatial Analysis of Moments of Stress Derived from Wearable Sensor Data** (25')
Kalliopi Kyriakou and Bernd Resch

14:35 **Human Mobility Modelling for Privacy Protection** (20')
Kamil Smolak, Katarzyna Sita-Nowicka and Witold Rohm

14:55 **Using Geotagged Photos to Study Mobility in Urban Parks During Shadow** (20')
Matan Mor, Sagi Dalyot and Dafna Fisher Gewirtzman

15:15 **Ld Up: Examining the Effects of a New York City Metro Shutdown on Public Discourse Using Twitter Data** (20')
Andreas Petutschnig, Bernd Resch, Jen Nelles and Laxmi Ramasubramanian

15:35 **Spatial Interpolation of Mobile Positioning Data for Population Statistics** (20')
Anto Aasa, Erki Saluveer, Pilleriine Kamenjuk, Janika Raun and Jan Šimbera

☕ 15:55–16:25 Coffee break

🕒 16:25–17:15 🧑 Chair: Haosheng Huang, University of Zurich

2-Minute Showcase & Poster Pitches

SHOWCASE: GI-POLIS: A Location-Based Push Notification System for Public Briefing and Awareness

Thomas Hatzichristos, Vassilis Tsetos, Stergios Ientsek and George Grekousis

SHOWCASE: Towards Augmented Exploration of Geospatial Urban Datasets

José Miguel Santana, Jochen Wendel, Syed Monjur Murshed, Agustín Trujillo, Sebastián Ortega

SHOWCASE: Baltic Explorer – A Collaborative Map Application for Maritime Spatial Planning

Christian Koski, Mikko Rönneberg, Pyry Kettunen, Juha Oksanen, Lise Schrøder, Henning Sten Hansen

Adapting Navigation Support to Location Quality: A Human Centered Approach

Champika Manel and Christian Kray

Landmark Classification for Navigation In Indoor Environments

Marcio Schmidt, Luciene Delazari, Amanda Antunes, Caroline Marchis and Rhaissa Sarot

Off-route Virtual Landmarks to Help Pedestrian Indoor Navigation

Marcio Schmidt, Luciene Delazari, Elias Naim and Vinicius Martins

A Simulation Method for Adjustment of Public Transportation Routes using Geotagged Smart Card Data

Inwoo Jeon, Minhyuck Lee and Chulmin Jun

Time-distance Accessibility of Public Transport considering In-vehicle Crowding based on Smart card data

Minhyuck Lee, Inwoo Jeon and Chulmin Jun

Demand Forecasting of a Public Bike-Sharing System Reflecting Dynamic Spatial Data

Jiwon Lee, Jiyoung Kim and Kiyun Yu

Areal Interpolation of Spatial Interaction Data

Jan Šimbera and Anto Aasa

Evacuation Simulation Considering Fire Spread and Occupants Distribution

Jaeyoung Lee, Minhyuck Lee and Chulmin Jun

A Low-cost Public Transport Tracking and Information System for Commuters in Sri Lanka

Pasindu Ranasingh, Thilantha Dammalage and Guenther Retscher

Designing Access Control of a Spatial Decision Support System for Collaborative Maritime Spatial Planning

Mikko Rönneberg, Søren Qvist Eliassen, Pyry Kettunen, Christian Koski and Juha Oksanen

A Location Based Service for Planning Tool

Saeed Mehri and Ali Asghar Alesheikh

Concerns on Design and Performance of a Local and Global Dynamic Map

Itziar Urbieto, Irati Mendikute, Harbil Arregui and Oihana Otaegui

Cartographic Visualisation of Data Measured by Field Harvesters

Lukas Herman, Tomas Reznik, Tomas Pavelka and Simon Leitgeb

Claiming Space Through Language: Conceptualizing a Location Based Cultural Space Experience

Aleyda Rocha Sepulveda, Eveline Wandl-Vogt and Georg Gartner

Usability analysis of 3D Maps for Pedestrian Navigation among Different Demographic Profiles

Meenu Mohan and Ana Basiri

🕒 17:15–18:30

Panel Discussion

Mobile Cartography Research Agenda

Amy Griffin, Haosheng Huang, Robert Roth

🍷 Join our icebreaker party

Tuesday, 12 Nov 2019

🕒 8:45–10:35 🧑 Chair: Sagi Dalyot, Israel Institute of Technology

Indoor Modelling and Localization

8:45 **Dynamic Wi-Fi Reference Point Recognition along Public Transport Routes** (20')

Guenther Retscher, Aizhan Bekenova, Arbër Fazliu, Michael Hallett, Luke Harvey and Jenny Janssen

9:05 **Dynamic Location Referencing: Probability-Based Decision System** (25')

Patric Hindenberger and Volker Schwieger

9:30 **Sensor Data Visualization for Indoor Point Clouds** (25')

Vladeta Stojanovic, Matthias Trapp, Benjamin Hagedorn, Jan Klimke, Rico Richter and Jürgen Döllner

9:55 **Automatic Floor Matching for 3D Indoor Spatial Modeling** (20')

Seula Park and Kiyun Yu

10:15 **Topology and Semantic based Automatic Indoor Space Subdivision from 2D Floor Plan** (20')

Sun Kwon, Hyun-Jung Kim and Ki-Yun Yu

🕒 10:35–11:15

Interactive Session I & Coffee Break

☕ Grab a coffee and join the conversation with our showcase and poster presenters

🕒 11:15–12:40 🧑 Chair: Peter Kiefer, ETH Zurich

Navigation and Wayfinding II

11:15 **Towards Urban Environment Familiarity Prediction** (25')

Lukas Gokl, Marvin Mc Cutchan, Bartosz Mazurkiewicz, Paolo Fogliaroni and Ioannis Giannopoulos

11:40 **Developing Cognitive-sounding Wayfinding Systems: A Mixed Method Approach** (20')

Nina Vanhaeren, Kristien Ooms and Philippe De Maeyer

12:00 **Towards a User Oriented Indoor Navigation System in Railway Stations** (20')

Wangshu Wang, Georg Gartner, Silvia Klettner, Tabea Fian, Georg Hauger, Alessandra Angelini, Martin Söllner, Arnd Florack, Michael Skok and Mathias Past

12:20 **Prediction of Landmarks Using (Personalised) Decision Trees** (20')

Eva Nuhn and Sabine Timpf

🍴 12:40-14:00 Lunch break

🕒 14:00-15:40 🗿 Chair: Carsten Keßler, Aalborg University

Mobility and Activity Analytics II

14:00 **Data-driven Trajectory Prediction and Spatial Variability of Prediction Performance in Maritime Location Based Services** (20')

Anita Graser, Johanna Schmidt, Melitta Dragaschnig and Peter Widhalm

14:20 **Cross-scale Spatial Enrichment of Trajectories for Speeding Up Similarity Computing** (20')

Cheng Fu and Robert Weibel

14:40 **Analyzing Performance in Orienteering from Movement Trajectories and Contextual Information** (20')

Christian Sailer, Henry Martin, Luca Gaia and Martin Raubal

15:00 **Trajectory and Mobility Based Services: A Research Agenda** (20')

Gyöző Gidófalvi

15:20 **Automatic Incident Detection along Freeways Using Spatiotemporal Bluetooth Data** (20')

Ben Levy, Sagi Dalyot and Jack Hadad

🕒 15:40-16:15

Interactive Session II & Coffee Break

☕ Grab a coffee and join the conversation with our showcase and poster presenters

🕒 16:15-18:05 🗿 Chair: Bernd Resch, University of Salzburg

Crowdsourcing and VGI

16:15 **Sensafety: Crowdsourcing the Urban Sense of Safety** (25')

Sandro Rodriguez Garzon and Bersant Deva

16:40 **Evaluating linked data location based services using the example of Stolpersteine** (25')

Timo Homburg, Klaus Böhm, Nicole Bruhn and Gregor Hubrich

17:05 **Consistency Across Geosocial Media Platforms** (20')

Carsten Keßler and Grant McKenzie

17:25 **WordCrowd – A Location-Based Application to Explore the City based on Geo-Social Media and Semantics** (20')

Kenzo Milleville, Dilawar Ali, Francisco Porras-Bernardez, Steven Verstockt, Nico Van de Weghe and Georg Gartner

17:45 **Snap4city Platform: Semantic to Improve Location Based Services** (20')

Pierfrancesco Bellini, Paolo Nesi, Michela Paolucci, Mirco Soderi and Paola Zamperlin

🍴 19:00 Conference Dinner at Esterhazykeller
Please find details on your dinner voucher

Wednesday, 13 Nov 2019

🕒 9:00-10:45 🗿 Chair: Christian Kray, University of Münster

AR and Mobile Cartography

9:00 **Geographic-Aware Augmented Reality for VGI** (25')
Paolo Fogliaroni, Bartosz Mazurkiewicz, Markus Kattenbeck and Ioannis Giannopoulos

9:25 **Head-mounted Augmented Reality Visualisation for Outdoor Pedestrian Navigation** (20')
Juliane Cron, Bernhard Jenny, Roar Engell and Zac Lucarelli

9:45 **Gaze-based Interaction with Maps and Panoramas** (20')
Laura Schalbetter, Tiffany C.K. Kwok, Peter Kiefer and Martin Raubal

10:05 **Map-based Dashboards versus Storytelling Maps** (20')
Chenyu Zuo, Linfang Ding, Edyta Paulina Bogucka and Liqiu Meng

10:25 **Interactive Web-based 3D Solar Shadow Map** (20')
Georg Molzer and Florian Ledermann

☕ 10:45-11:15 Coffee break

🕒 11:15-12:45 🗿 Chair: Jukka Krisp, University of Augsburg

User Issues and Motivation

11:15 **Location Based Services for Human Self-Localization** (25')
Gerhard Navratil, Manuel Schmitzer and Ioannis Giannopoulos

11:40 **User Behaviour in the Wild: Analysing Naturalistic Log Data of a Pedestrian Navigation App** (25')
Robert Jackermeier and Bernd Ludwig

12:05 **Usability Test of Map-based Interactive Dashboards Using Eye Movement Data** (20')
Chenyu Zuo, Bing Liu, Linfang Ding, Edyta Paulina Bogucka and Liqiu Meng

12:25 **Barriers seen by potential local Providers of Applications using Location-Based Services** (20')
Per Ole Uphaus, Oliver Neuper, Björn Beringer, Lukas Hoffmann, Simon Langenmaier, Annika Ehlers and Harald Rau

🕒 12:45-13:00 🗿 Chair: Georg Gartner, TU Wien

Closing

12:45 **Presentation of LBS 2020**

12:50 **Closing**

🍷 Join us for farewell drinks

📶 Please find your wifi login on the back of your name badge.
TU Wien also supports eduroam.

Organized by  ICA Commission on Location Based Services



Lunch options close to the conference venue

Lunch is not provided, but there are many food options in walking distance.



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Cartography: manuschmidt.com