Opening 13:00 - 13:05
13:00 - 13:05 Introduction by the Organizers
Gennady Andrienko, Dimitrios Gunopulos, Vana Kalogeraki, Ioannis Katakis, Thomas Liebig, Jakub Marecek, Katharina Morik

Session A 13:05 - 14:30
13:05 - 13:45 (INVITED TALK) Andrew Tomkins (Google AI)
Using Crowdsourced Data for Parking and Itinerary Generation
13:45 - 14:30 Paper Presentations
[1] Sudatta Mohanty and Alexey Pozdnukhov, Graph CNN + LSTM Framework For Dynamic Macroscopic Traffic Congestion Prediction
[2] Obaid Malik, Sarvapali Ramchurn and Alex Rogers, A Multi-output Gaussian Process Model for Leak Detection and Quantification in Water Distribution Systems
[4] Phillip Taylor, Nathan Griffiths and Alex Mouzakitis, Selection of Compressible Signals from Telemetry Data

Coffee Break 14:30 - 15:00
Session B 15:00 - 17:00
15:00 – 15:40 (INVITED TALK) Jakub Marecek (IBM)
Recommender Systems and their Effects
15:40 - 17:00 Paper Presentations
[7] Seyedsaeed Hajiseyedjavadi, Yu-Ru Lin and Konstantinos Pelechrinis, Discovering functionality of urban regions by learning low-dimensional representations of a spatial multiplex network
[8] Piotr Wawrzyniak and Jaroslaw Legierski, On the Use of Apache SAMOA to Predict Delay and Position of Public Transport Vehicles
[12] Henry Dinhofer, Prateek Sappadla and Lakshminarayanan Subramanian, Maximizing Coverage of EMS services in New York City using a Double Standard Model

Speakers instructions: Each presentation will take up to 11 minutes (9 minutes presentation, 2 minutes questions)
Invited Speaker 1

Andrew Tomkins (Google AI)

Bio: Andrew joined Google Research in 2009, where he serves as an engineering director, currently working on machine learning and understanding of geo data. Prior to these projects, he worked on measurement, modelling, and analysis of content, communities, and users on the World Wide Web. Before joining Google, he spent four years at Yahoo! serving as chief scientist of search, and eight years at IBM's Almaden Research Center, where he served as chief scientist on the WebFountain project. Andrew has authored over 100 technical papers and 90 issued patents. He received Bachelors degrees in Mathematics and Computer Science from MIT, and a PhD in CS from Carnegie Mellon University.

Title: Using Crowdsourced Data for Parking and Itinerary Generation

Abstract: Large-scale crowdsourced data is widely used in many domains, both online and offline. For example, systems for road navigation often use crowdsourced information about driver speed in order to estimate traffic conditions. In this talk, we'll discuss two other uses of crowdsourcing in a similar vein: estimating properties of the parking at a particular location, and generating high-quality travel itineraries within a city. The talk will describe the data and algorithms used for both of these problems, and will give some examples of actual products that use the technology.

Invited Speaker 2

Jakub Marecek (IBM Ireland)

Bio: Together with some fabulous colleagues, Jakub Marecek develops solvers for optimisation and control problems at IBM Research -- Ireland. Jakub joined IBM Research from the School of Mathematics at the University of Edinburgh in August 2012. Prior to his post-doc in Edinburgh, Jakub had presented an approach to general-purpose integer programming in his dissertation at the University of Nottingham and worked in two start-up companies.

Title: Recommender Systems and their Effects

Abstract: Recommender systems are widely used in settings, where actions impact the recommendations, which in turn have impact on the actions. For an example of such a closed-loop setting, consider navigation systems, which use information about travel times to recommend a route. If the particular navigation system is used widely enough, the recommendation may impact the future traffic state, possibly rendering the recommendation suboptimal from both the point of view of the driver and the society as a whole. Similar effects can be illustrated on the recommendations of restaurants. If a small bistro without a table reservation system becomes top ranked, many customers may arrive at its door and get turned down, leading to poor reviews. Further, there can be issues related to priming, for example when the reviews suggest the place is not touristy. Several problems arise, including the recovery of unbiased user models in the presence of recommenders and developing recommenders that allow for some guarantees on the closed-loop behaviour of the system.