



Editor-in-Chief
Johannes Fuernkranz

Data Mining and Knowledge Discovery

Special Issue Call for Papers

Data Mining for Smart Cities

Katharina Morik, TU Dortmund University, Germany
katharina.morik@tu-dortmund.de

**Guest
Editors:**

Fosca Giannotti, ISTI-CNR, Pisa, Italy
fosca.giannotti@isti.cnr.it

Marta Gonzalez, MIT, USA
marta.gonzalez.v@gmail.com

Ioannis Katakis, National and Kapodistrian U of Athens, Greece
ioannis.katakis@gmail.com

Paper Submission

Submission Due:
July 4, 2016, 23:59 UTC

Authors are encouraged to submit high-quality, original work that has neither appeared in, nor is under consideration by, other journals.

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More than 54% of the world's population lives in urban areas, i.e., more than 3.9 billion people¹. This challenges the cities' communities and institutions to develop smart infra-structures and services for mobility, homes, care, and energy. Also companies invest into a sustainable economic development of cities. Due to smartphones as a human sensor and other sensors that are integrated into public transport, home infrastructure, streets, or buildings, a plenitude of data exists. Micro-blogging and social networks provide linguistic data and pictures in a stream. Open data from city councils provides additional information. The analysis of a city's data faces diverse tasks ranging from the raw data to actually controlling processes like, e.g., traffic lights or the heating at home. The purpose of this special issue is to bring together the contributions of data mining to all aspects of smart cities.

Topics of Interest:

Researchers are invited to submit papers focusing on data mining techniques for smarter cities such as:

- Urban data fusion from heterogeneous sources
- Social sensing and semantic enrichment
- Big data analytics and social mining for urban studies
- Real-time nowcasting and prediction of events
- Mobility mining and modeling for vehicles and crowds
- Traffic forecasting
- City user profiling
- Nudging and recommendation models for citizens behavior
- Interplay of data mining and complex system modeling for urban studies
- Interactive exploration of city data
- Visual analytics of static and streaming data
- Social network analysis for enhancing urban services
- Participatory crowd sensing
- Incentive models for citizen participation
- Data streams management and analysis
- Feature extraction and deep learning from urban data
- Analysis and forecasting of extraordinary city events

We encourage submission of papers that are utilizing open urban data or that make their datasets available online.

¹United Nations DESA, World Urbanization Prospects⁴, updated 2014
<https://www.un.org/development/desa/en/news/population/world-urbanization-prospects.html>.
“Managing urban areas has become one of the most important development challenges of the 21st century.” said John Wilmoth, Director of UN DESA's Population Division.