



Twenty-Sixth AAAI Conference on Artificial Intelligence (AAAI-12) Workshop Program

July 22-23, 2012
Toronto, Ontario
Canada

Sponsored by
Association for the
Advancement of Artificial Intelligence
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Deadlines

- March 30: Submissions due (unless noted otherwise)
- April 20: Notification of acceptance
- May 16: Camera-ready copy due to AAAI
- July 22–23: AAAI-12 Workshop Program

AAAI Formatting Guidelines

- www.aaai.org/Publications/Author/author.php

AAAI is pleased to present the AAAI-12 Workshop Program. Workshops will be held Sunday and Monday, July 22–23, 2012 at the Sheraton Centre Toronto Hotel in Toronto, Ontario, Canada. Exact locations and dates for the workshops will be determined in the spring. The AAAI-12 workshop program includes 10 workshops covering a wide range of topics in artificial intelligence. Workshops are one day unless noted otherwise in the individual description. Each workshop is limited to approximately 25 to 65 participants. Participation at these workshops is by invitation from the workshop organizers. All workshop participants must preregister, and indicate which workshop(s) they will be attending. Please note that there is a separate registration fee for attendance at a workshop. Workshop registration is available for workshop only registrants or for AAAI-12 technical registrants at a discounted rate. Registration information will be mailed directly to all invited participants. A workshop report CD is included in the workshop registration fee, and will be distributed onsite during the workshop. In most cases, workshop papers will also be available after the conference as part of the AAAI Press technical report series.

Submission Requirements

Submission requirements vary for each workshop, but key deadlines are uniform. Submissions are due to the organizers on March 30, 2012 (please check individual workshop websites for extensions). Workshop organizers will notify submitters of acceptance by April 20, 2012. Camera-ready copy is due to AAAI by May 16, 2012 (firm deadline). Please submit your papers directly to the individual workshop according to their directions. Do not mail submissions to AAAI. For further information about a workshop, please contact the chair of that workshop.

Format

AAAI two-column format is often required for workshop submissions, and is always required for all final accepted submissions. Links to styles, macros, and guidelines for this format are included in the AAAI-12

author kit (www.aaai.org/Publications/Templates/AuthorKit.zip).

AAAI Workshop Chairs

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Contents

- ☞ W1: Activity Context Representation: Techniques and Languages
- ☞ W2: AI for Data Center Management and Cloud Computing
- ☞ W3: Cognitive Robotics
- ☞ W4: Grounding Language for Physical Systems
- ☞ W5: Human Computation
- ☞ W6: Intelligent Techniques for Web Personalization and Recommendation
- ☞ W7: Multiagent Pathfinding
- ☞ W8: Neural-Symbolic Learning and Reasoning
- ☞ W9: Problem Solving Using Classical Planners
- ☞ W10: Semantic Cities

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Pervasive context-aware computing technologies are essential enablers for next-generation applications for the digital workplace, consumer electronics, research, education, government and health-care. Context-aware cognitive support requires activity and context information to be captured and, ever more often, moved across devices — securely, efficiently and with multidevice interoperability.

This workshop builds on techniques to represent context within activity models using a synthesis of HCI/CSCW and AI approaches to improve the human-computer interface for enhanced human performance of knowledge work, including reducing demands on people, such as the cognitive load inherent in activity/context switching.

Objectives

The objectives and intended end results of the workshop are as follows:

1. Discuss and review/revise initial drafts of structure of potential activity context representation and exchange languages
2. Explore fresh topics by discussing position papers/proposals building on key research focus areas.
3. Augment the core research group, identify new collaborations, and formalize an international academic and industrial consortium to significantly augment existing standards/drafts/proposals and create new research initiatives.

Topics

We will explore task and context modeling issues of capture, representation, exchange, standardization and interoperability for creating context-aware and activity-based assistive cognition tools, including but not limited to the following:

- ☛ Activity modeling, representation, recognition, detection, and acquisition
- ☛ Context capture and representation within activities
- ☛ Semantic activity reasoning
- ☛ Information integration and exchange
- ☛ Use-cases/scenarios, architectures and prerequisites
- ☛ Security and privacy

Format

This two-day workshop will include keynotes to set the tone, invited comprehensive reviews of the field, new proposals, open panel focusing on key research issues and directions, discussion of proposals on new frameworks for synthesis of multiple and new approaches, and working group formation to investigate sub-areas during the year. There will be plenty of opportunity for questioning existing systems, creating research partnerships and identifying fresh research ideas. The size of the workshop will be about 25 re-

searchers with a majority of participants selected from the respondents to the call for participation.

Submissions

Researchers should submit 6–8 page papers or 3–4 page position statements in the standard AAAI format or provide a 1–2 page statement of interest along with a description of their related work and publications. All the selected papers will be published in a AAAI Technical Report volume. All submissions, statements, or requests to be on this workshop's (moderated) mailing list should be sent to Vikas Agrawal (activity-context@infosys.com).

Organizing Committee

Lokendra Shastri, Chair (Infosys), James "Bo" Begole (PARC - Palo Alto Research Center), Tim Finin (University of Maryland, Baltimore), Henry Kautz (University of Rochester), Vikas Agrawal (Infosys).

Additional Information

For additional information, please visit the supplemental workshop site (activitycontext.org/aaai12).

Cloud computing is an emerging paradigm that aims at delivering on-demand computing to any consumer who has access to the internet. Cloud systems can run software on virtual machines that can be created on-demand in large data centres. These services will be provided through large-scale networks of new data centers, which in turn will connect to the data centers already established by organizations. As a user's demand for computing power increases, new virtual computers can be created and configured; as demand decreases, unused hardware resources can be made available again.

The objective of this workshop is to bring together researchers and technologists from academia and industry to explore the applications of artificial intelligence to the most pertinent technical challenges in data center management and cloud computing. Workshop participation will be by invitation only.

Topics

Topics of interest related to data center management and cloud computing include but are not limited to the following applications of AI methods to problems in the domain: online stochastic optimisation; machine learning and data mining; parameterised complexity and graph theory; optimal stopping theory for online decision-making; game theory and incentive compatible mechanism design; virtualisation; data governance, trust and security; energy and performance profiling, accounting; metrics, benchmarks, interfaces; principles of power management; performance, energy and other resource trade-offs, energy complexity; compiler optimization, application design; system-level optimization, cross-layer coordination; load and resource modeling, management; scheduling, run-time adaptation, feedback control; processor, network, storage, hardware components and architecture; reliability and power management; adaptive configuration and data placement strategies in storage arrays; protocol management and conversion in an SOA environment.

Submissions

If you would like to participate, submit either a full paper of no more than 6 pages (6,000 words); a short paper, or problem instance (at most 3 pages or 3,000 words); or a position statement (1 page). Short papers may address an important problem for further research or describe a practical problem or an interesting lesson learned. In addition, we solicit proposals for short demonstrations (at most 3 pages with demonstrations taking at most 15 minutes). All submissions should conform to AAAI's formatting guidelines, and should be submitted via EasyChair (www.easychair.org/account/conferences/?conf=aidc2012).

Workshop Cochairs

Barry O'Sullivan (4C, UCC, Ireland)

Donagh Buckley (EMC, Ireland)

Contact: aidc2012@easychair.org

Additional Information

For additional information, please visit the supplemental workshop site (osullivan.ucc.ie/aaai-2012-aidc).

Research in robotics has traditionally emphasized low-level sensing and control tasks including sensory processing, path planning, and manipulator design and control. In contrast, research in cognitive robotics is concerned with endowing robots and software agents with higher level cognitive functions that enable them to reason, act and perceive in changing, incompletely known, and unpredictable environments. Such robots must, for example, be able to reason about goals, actions, when to perceive and what to look for, the cognitive states of other agents, time, collaborative task execution, and so on. In short, cognitive robotics is concerned with integrating reasoning, perception and action with a uniform theoretical and implementation framework.

The use of both software robots (softbots) and robotic artifacts in everyday life is on the upswing and we are seeing increasingly more examples of their use in society with commercial products around the corner and some already on the market. As interaction with humans increases, so does the demand for sophisticated robotic capabilities associated with deliberation and high-level cognitive functions. Combining results from the traditional robotics discipline with those from AI and cognitive science has and will continue to be central to research in cognitive robotics.

Topics

This workshop aims to bring together researchers involved in all aspects of the theory and implementation of cognitive robots, to discuss current work and future directions. While the emphasis of the workshop is on the methods and techniques developed in the field of AI, we welcome work in related cognitive science disciplines investigating computational/cognitive models of behavior. Also, we especially welcome discussions and demonstrations of implemented systems.

Format

We anticipate a two-day workshop that will comprise several sessions including presentations of research papers, position papers, and posters. The workshop will also include discussion panels and a session for live system demonstrations, providing an opportunity to showcase and discuss emerging technologies.

Attendance

Attendance at this workshop is open to all interested in the field, as well as authors of accepted papers. Those interested to attend who have not a paper to present, are encouraged to send a brief submission of interest to the workshop chairs before the event. We expect 25–50 attendees.

Submissions

Potential participants are invited to submit either a full-length technical paper or a statement of interest with a position paper. Submissions are accepted in PDF format only, using the AAAI formatting guidelines. Submissions must be no longer than eight pages in length, including references and figures. Please submit via EasyChair (www.easychair.org/conferences/?conf=cogrob2012). Author names should be included. Please refer to the AAAI style guide for details.

Organizing Committee

Wolfram Burgard (Institute for Informatik, Albert-Ludwigs-Universität Freiburg, Freiburg, Germany, burgard@informatik.uni-freiburg.de); Kurt Konolige (Willow Garage, Menlo Park, USA, konolige@willow-garage.com); Maurice Pagnucco (University of New South Wales, Sydney, Australia, morri@cse.unsw.edu.au); Stavros Vassos (National and Kapodistrian University of Athens, Athens, Greece, stavrosv@di.uoa.gr — contact)

Additional Information

For additional information, please visit the supplemental workshop site (www.cse.unsw.edu.au/~cogrob/2012).



Grounding Language for Physical Systems

Natural language is a powerful and intuitive modality for enabling humans to interact with physical systems. Understanding language about physical systems requires the ability to ground the language, or to extract a semantically meaningful representation from the language and map it to the external world. Language grounding has received substantial attention recently, due largely to recent advances in robotics, sensing, natural language processing, and formal representation systems. The AAAI-12 workshop on Grounding Language for Physical Systems will provide a venue to discuss shared problems, descriptions of key research problems and challenges, and make progress towards formulating shared definitions.

Topics

Topics will include but are not limited to the following:

- ☛ Definitions of and possible approaches to the grounding problem.
- ☛ Methods and models for mapping between language and the external world.
- ☛ Interactive physical systems for exploring grounding.
- ☛ Knowledge representations that support a range of semantic constructions.
- ☛ Algorithms for learning grounded meanings from gesture, language, and other inputs.
- ☛ Interpreting instructions for physically-grounded perceptual or manipulative tasks.
- ☛ Vision, haptics, audio, and other sensing modalities for grounding linguistic elements such as attributes, objects, tasks, and spatial relationships.
- ☛ Challenge problems in the grounding space.

Format

The workshop will consist of six invited talks and a poster session; discussion periods after each talk will facilitate interaction among participants. Authors of accepted papers will present at the poster session over lunch, and some authors may also be invited to give short talks. A moderated final discussion will provide an opportunity to sum up the results of the day and define next steps.

The workshop is expected to have 25–30 researchers, split among invited participants, respondents to the call for participation, and interested researchers from relevant areas.

Submissions

Paper submissions should not exceed 6 pages in length, and should be in PDF format. Submissions should be formatted according to the AAAI 2012 Workshop Author Instructions (this will not be a double-blind reviewing process). Please email all submissions to grounding@cs.washington.edu.

Organizers

Cynthia Matuszek (University of Washington, cynthia@cs.washington.edu); Stefanie Tellex (Massachusetts Institute of Technology, stefie10@csail.mit.edu); Dieter Fox (University of Washington, fox@cs.washington.edu) and Luke Zettlemoyer (University of Washington, lsz@cs.washington.edu)

Additional Information

For additional information, please visit the supplemental workshop site (www.cs.washington.edu/ai/Mobile_Robotics//GroundingWorkshop.html).

Human computation is a nascent research area that studies how to build intelligent systems that involve human computers, with each of them performing computation (for example, image classification, translation, and protein folding) that challenges even the most sophisticated AI algorithms that exist today. With the immense growth of the web, human computation systems can now leverage the abilities of an unprecedented number of Internet users to perform complex computation. Various genres of human computation applications are available today, including games with a purpose (for example, the ESP Game), crowdsourcing marketplaces (for example, Amazon Mechanical Turk), and identity verification systems (for example, reCAPTCHA).

Despite the variety of human computation applications, there exist many common core research issues. How can we design mechanisms for querying human computers that incentivizes truthful responses? How do we effectively assign tasks to human computers to match their particular expertise and interests? What are programming paradigms for designing algorithms that effectively leverage a crowd? How do we build human computation systems that involve the joint efforts of both machines and humans? Significant advances on such questions will likely draw on many disciplines, including machine learning, mechanism and market design, information retrieval, decision-theoretic planning, optimization, human computer interaction, and so forth.

The goal of this workshop is to bring together academic and industry researchers from diverse subfields in AI for a stimulating discussion of existing human computation applications and future directions of this relatively new subject area.

Topics

Topics of interest include, but are not limited to the following:

- ☛ Programming languages, tools and platforms to support human computation
- ☛ Domain-specific challenges in human computation
- ☛ Methods for estimating the cost, reliability, and skill of labelers
- ☛ Methods for designing and controlling workflows for human computation tasks
- ☛ Empirical and formal models of incentives in human computation systems
- ☛ Design of manipulation-resistance mechanisms in human computation
- ☛ Techniques for inferring expertise and routing tasks to the appropriate individuals
- ☛ Theoretical limitations of human computation
- ☛ Novel human computation systems

Format

The workshop consists of invited talks from prominent researchers, presentations of selected technical and position papers, and two poster and demo sessions.

Submissions

Technical papers and position papers may be up to 6 pages in length. For demos and poster presentations, authors should submit a short paper or extended abstract, up to 2 pages. We welcome early work, and particularly encourage submission of visionary position papers that are more forward looking, and perspectives from a variety of disciplines outside of the core AI community. All papers should follow AAAI formatting guidelines and should be submitted electronically to the workshop submission site (cmt.research.microsoft.com/HCOMP2012).

Organizing Committee

Yiling Chen, Chair (yiling@seas.harvard.edu, Harvard University), Luis von Ahn (biglou@cs.cmu.edu, Carnegie Mellon University), Panagiotis G Ipeirotis (panos@stern.nyu.edu, New York University), Edith Law (primary contact) (edith@cmu.edu, Carnegie Mellon University), Haoqi Zhang (hq@eecs.harvard.edu, Harvard University)

Additional Information

For additional information, please visit the supplemental workshop site (humancomputation.com/2012).

Web personalization tailors the web experience to a particular user or set of users. Recommender systems represent one special and prominent class of personalized web applications, which focus on user-dependent filtering and support online users in the decision-making and buying process. In the light of the growing importance of these areas and their increasing overlap, the aim of this workshop is to bring together researchers and practitioners of both fields, to foster an exchange of information and ideas, and to facilitate a discussion of current and emerging topics relevant to building personalized intelligent systems for the web.

Topics

User model representation and decision support: Knowledge acquisition strategies, user context modeling, cross-domain models, privacy, cognitive models for Web navigation, self-adaptation, utility function elicitation from user interaction, user modeling on the social web

Architectures, systems and enabling technologies: Personalized search, scalability of personalization and recommendation techniques, intelligent browsing and navigation, adaptive hypertext systems, hybrid and conversational recommendation systems, context-awareness, data/web mining for personalization, link analysis and graph mining, automated techniques for ontology generation, learning, and acquisition; machine learning techniques for information extraction, social web, and the semantic web

User and algorithm centric evaluation methodologies, metrics, and case studies

Format

The program of the one-day workshop will be divided into "themed" technical sessions and a substantial amount of time allocated to open discussion. The workshop program will be complemented by invited talks and a panel discussion, which address emerging topics in the field.

Attendance

The workshop is open to everyone interested in attending.

Submissions

Papers must be formatted according to the AAAI 2012 style guide. We solicit short and long papers as well as research demos. Long papers (8 pages) present original research work; short papers (4 pages) report on work in progress or describe demo systems. Papers must be submitted electronically as PDFs to itwp2012@ls13.cs.uni-dortmund.de. The papers will be selected based on a peer-review process. (Full address: Dietmar Jannach, TU Dortmund, 44221 Dortmund, Germany, Phone +49 231 755 7272)

Workshop Chairs

Dietmar Jannach (TU Dortmund, Germany, dietmar.jannach@udo.edu); Sarabjot Singh Anand (University of Warwick, UK, s.s.anand@warwick.ac.uk); Bamshad Mobasher (DePaul University, Chicago, USA, mobasher@cs.depaul.edu); Alfred Kobsa (University of California, Irvine, USA, kobsa@uci.edu)

Additional Information

For additional information, please visit the supplemental workshop site (ls13-www.cs.uni-dortmund.de/homepage/itwp2012).

Recently, there has been a growing interest in multiagent path planning (MAPF). The problem is to compute a path for each agent from an initial to a goal location without conflicting with other agents, often aiming to minimize a cost function, such as elapsed time or throughput. Applications include vehicle fleet coordination, computer games, robotics and various military scenarios.

Some researchers have worked at a theoretical level, while others have implemented solvers for specific applications. Thus, related papers have appeared in multiple venues, including AIJ, JAIR, AAI, IJCAI, ICRA, IROS, ICAPS and SoCS. Consequently, similar concepts were developed in different sub-communities, using varying terminology.

This workshop aims to bring together researchers working on multiagent path planning from the different communities. The main goals are the following:

- ♥ Familiarize researchers from different areas with the varying contributions to this problem.
- ♥ Standardize terminology and develop a taxonomy for different variants.
- ♥ Present the state-of-the-art and discuss open challenges.
- ♥ Encourage collaboration between participants.

Format

The workshop format will include (1) an introductory session that will provide problem definitions, survey existing directions and propose a general terminology; (2) oral and poster presentations selected from the submissions based on their relevance and merit; (3) a discussion panel that will review different approaches for multiagent pathfinding in an informal setup; and (4) a dinner that will conclude the workshop and encourage discussions.

Submissions

Interested participants can submit one of the following via the workshop supplemental webpage

- ♥ Unpublished papers, which adhere to the AAI paper-formatting guidelines (at most 8 pages). Papers under review elsewhere should state this explicitly. Two-page summaries of work in-progress are encouraged.
- ♥ Existing papers that appeared in established venues in the past few years. The submission should state the original venue. Two-page summaries of past work are encouraged.
- ♥ A short statement of interest.

Submissions will go through a light review process.

Organizing Committee

Ariel Felner (Ben Gurion University of the Negev, Israel, felner@bgu.ac.il); Nathan Sturtevant (University of Denver, sturtevant@cs.du.edu); Kostas E. Bekris (University of Nevada-Reno, bekris@cse.unr.edu); Roni Stern (Ben Gurion University of the Negev, Israel, roni.stern@gmail.com)

Additional Information

For additional information, please visit the supplemental workshop site (movingai.com/mapf).



Artificial intelligence (AI) researchers continue to face huge challenges in their quest to develop truly intelligent systems. The recent developments in the area of neural-symbolic integration offer an opportunity to combine symbolic AI and robust neural computation to help tackle some of these challenges.

The Neural-Symbolic Learning and Reasoning workshop attracts researchers and practitioners in the areas of neural computation, artificial intelligence, logic, complex networks and cognitive science. It is intended to create an atmosphere of exchange of ideas, providing a forum for the presentation and discussion of the key multidisciplinary topics related to neural-symbolic integration. Topics of interest include the following:

- The representation of symbolic knowledge by subsymbolic systems
- Integrated neural-symbolic approaches to machine learning
- Extraction of symbolic knowledge from trained neural networks
- Integrated neural-symbolic approaches to human and logical reasoning
- Cognitive and biologically-inspired neural-symbolic agents
- Integration of logic and probabilities in neural networks
- Structured learning and relational learning in neural networks
- Applications in robotics, simulation, fraud prevention, semantic web, software engineering, fault diagnosis, verification and validation, bioinformatics, visual intelligence, and others.

Presentation and Participation

Accepted papers must be presented during the workshop. The workshop will also include extra time for discussion, allowing the audience to get a better understanding of the issues, challenges and ideas being presented. The workshop is open to all members of the AI community, but the number of attendees may have to be limited.

Submissions

You are invited to submit papers through EasyChair (www.easychair.org/conferences/?conf=nesy12). Submitted papers must not have been published elsewhere, must be written in English and should not exceed 6 pages in the case of research and experience papers or 3 pages in the case of position papers (including figures, bibliography and appendices). All submitted papers will be refereed based on their quality, relevance, originality, significance and soundness. Accepted papers will be published in the AAAI Technical Report series and will be included in the official workshop proceedings. Authors of the best papers will be invited to submit a revised and extended version of their papers for formal publication.

Organizing Committee

Artur d'Avila Garcez (City University London, UK), Pascal Hitzler (Wright State University, USA), Luis C. Lamb (Universidade Federal do Rio Grande do Sul, Brazil)

Additional Information

For additional information please visit the supplemental workshop site (www.neural-symbolic.org). General questions concerning the workshop should be addressed to Artur d'Avila Garcez at aag@soi.city.ac.uk.

Classical planning has made huge advances in the last twenty years, leading to solvers able to create plans with thousands of actions for problems described by hundreds of propositions. Yet, the assumptions of classical planning (determinism, model completeness, and others) are often criticized as being too restrictive to address "real" planning problems.

Recently many researchers have started to exploit the good performance of classical planners to solve a much wider range of problems that, although they may not appear to be "deterministic planning" problems, nevertheless fit within the classical planning model (that is, propositional description of a known state and goal, deterministic actions that modify a state). The approach typically consists of creating classical planning problems whose solution is directly or indirectly used to obtain a solution to the original problem. In this way, classical planners have been used for dealing with more expressive planning problems, including incomplete information, temporally extended goals and preferences, as well as to solve problems in bioinformatics (for example, genome rearrangement and gene regulatory networks), and active diagnosis. In some cases, modifications of the classical planner may be necessary.

Topics

This workshop welcomes submissions on the use of classical planners for solving challenging problems in AI, and in other fields. Topics of interest include, but are not limited to:

Solving AI problems, including expressive planning, agent and multiagent systems, game playing, story telling, knowledge acquisition, reasoning with preferences, computational social choice, natural language and commonsense reasoning.

Real-world application problems where creating a classical planning problem is a key step in the proposed solution.

Submissions

We plan to have one or two invited speakers, representing academic and industry research, as well as oral presentation of papers accepted. Workshop submissions can be technical papers (up to 6 pages) or shorter position statements, challenges, and so on. Technical papers will be reviewed by at least one researcher. Please submit your paper through EasyChair (www.easychair.org/account/conferences/?conf=cp4ps12).

Organizing Committee

Hector Palacios (Universidad Carlos III de Madrid. Spain, hpalacio@inf.uc3m.es); Jorge Baier (Pontificia Universidad Católica de Chile. Santiago, Chile, jabaier@cs.toronto.edu); Patrik Haslum (The Australian National University, Canberra, Australia, patrik.haslum@anu.edu.au)

Additional Information

For additional information, please visit the supplemental workshop site (cp4ps-12.ing.puc.cl).

Cities around the world aspire to provide superior quality of life to their citizens. An increasing number have realized that opening access to their data, and building semantic models to abstract as well as interconnect them can unleash economic growth while addressing sustainability issues. We call cities that enable such capabilities "semantic cities."

In a semantic city, available resources are harnessed safely, sustainably and efficiently to achieve positive, measurable economic and societal outcomes. Enabling City information as a utility, through a robust (expressive, dynamic, scalable) and (critically) a sustainable technology and socially synergistic ecosystem could drive significant benefits and opportunities. Data (and then information and knowledge) from people, systems and things is the single most scalable resource available to City stakeholders to reach the objective of semantic cities.

Two major trends are supporting semantic cities — open data and semantic web. "Open data is the idea that certain data should be freely available to everyone to use and republish as they wish, without restrictions from copyright, patents or other mechanisms of control." A number of cities and government have made their data publicly available, prominent being London (UK), Chicago (USA), Washington DC (USA), and Dublin (Ireland).

Semantic web as the technology to interconnect heterogeneous data has matured and it is being increasingly used in the form of Linked Open Data and formal ontologies. Thus, a playfield for more AI research-driven technologies for cities has emerged.

In this context, the aims of the workshop are to:

- ☞ Draw the attention of the AI community to the research challenges and opportunities in semantic cities.
- ☞ Draw the attention on the multidisciplinary dimension and its impact on semantic cities for example, transportation, energy, water management.
- ☞ Identify unique issues of this domain and what new techniques may be needed. As an example, since governments and citizens are involved, data security and privacy are first-class concerns.
- ☞ Promoting more cities to become semantic cities.
- ☞ Elaborating a (semantic data) benchmark for testing AI techniques on semantic cities.
- ☞ Provide a platform for sharing best-practices and discussion.

We encourage submissions that show the relevance or application of AI technologies for computational sustainability domains. Apart from focus on foundational technologies for semantic cities (information management, knowledge management, ontology, inference model, data integration), we want to promote illustrative use-cases using the semantic cities foundation.

Examples are transportation (traffic prediction, personal travel optimization, carpool and fleet scheduling), public safety (suspicious activity detection, disaster management), healthcare (disease diagnosis and prognosis, pandemic management), water management (flood prevision, quality monitoring, fault diagnosis), food (food traceability, carbon-footprint tracking), energy (smart grid, carbon footprint tracking, electricity consumption forecasting) and buildings (energy conservation, fault detections). We also encourage submissions that address unique characteristics of standard AI enabling sustainability problems, like optimization, reasoning, planning and learning. Outside AI, we encourage submissions from communities engaged in open data and corresponding standardization efforts, to make their work available at this AI forum.

Topics of interest include, but not restricted to, are:

- ☞ Process to open city (government) data
- ☞ Platforms to manage government data
- ☞ Provenance, access control and privacy-preserving issues in open data
- ☞ Data cities interoperability
- ☞ Semantic models - especially those built collaboratively and evolving
- ☞ Data integration and organization in semantic cities (social media feeds, sensor data)
- ☞ Internet of things in semantic cities
- ☞ Robust inference models for semantic cities
- ☞ Semantic event detection and classification
- ☞ Applications in semantic cities
- ☞ Spatio-temporal analysis and visualization
- ☞ User interaction in exploring semantic data of cities
- ☞ Knowledge representation and reasoning challenges
- ☞ Knowledge acquisition, evolution and maintenance
- ☞ Challenges with managing and integrating real-time and historical data
- ☞ Managing "big data"
- ☞ Integrated systems
- ☞ Applied AI models for semantic cities
- ☞ Issues in scaling out AI techniques for semantic cities
- ☞ Case studies, successes, lessons learned
- ☞ Public datasets and competitions

Format

The workshop will consist of papers and poster presentations, a panel, an invited talk, and discussion sessions, in one full-day schedule. The invited talk will invite a leading expert in the field to present their research and vision of future work. The panel will focus on connecting the AI researchers to the various challenges that the targeted domain brings.

Submissions

All papers submissions must be in AAAI format. They can be one of two types. The first is regular research papers, which can be up to 6 pages long and are expected to present a significant contribution. The second is short submission of up to 4 pages, which describes a position on the topic of the workshop or a demonstration/ tool. All submissions will be handled electronically via EasyChair (www.easychair.org/account/signin.cgi?conf=semanticcitiesaaai20).

Cochairs

Biplav Srivastava (IBM T. J. Watson Research Center, Hawthorne, USA, sbiplav@in.ibm.com); Freddy Lecue (IBM Research — Smarter Cities Technology Centre, Dublin, Ireland, freddy.lecue@ie.ibm.com); Anupam Joshi (University of Maryland, College Park, USA, joshi@cs.umbc.edu)

Additional Information

For additional information, please visit the supplemental workshop site (research.ihost.com/semanticcities12).

