

Introduction to the IAAI Articles in This Issue

Emerging Innovative Applications of Artificial Intelligence 2012

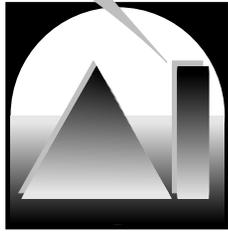
Markus Fromherz and Héctor Muñoz-Avila

■ *This issue of AI Magazine contains the Robert S. Engelmore Memorial Lecture paper and expanded versions of articles that discuss emerging applications from IAAI-12.*

The Innovative Applications of Artificial Intelligence conference (IAAI) is the premier venue for documenting the transition of AI technology into applications. In this and the next issue of *AI Magazine*, we will present extended versions of papers presented at IAAI-12 (held in Toronto, Ontario, Canada) that were selected for their description of AI technologies that are either in practical use or close to it. We also present an article by Ramon Lopez de Mantaras based on his 2011 Robert S. Engelmore Memorial Lecture.

Our selections for this issue begin with *Playing with Cases: Rendering Expressive Music with Case-Based Reasoning* by Ramon Lopez de Mantaras and Josep Lluís Arcos, based on the Robert S. Engelmore Memorial Lecture at IAAI-11 in San Francisco, California. Lopez de Mantaras received the Robert S. Engelmore Memorial Lecture Award for his pioneering research contributions in a breadth of artificial intelligence areas, especially pattern recognition and case-based reasoning, leading to novel applications in design, diagnosis, and music, and for extensive international leadership and service for the AI community. He is also a founding member of several AI companies. He has a wealth of inspiring experience to report from his research on rendering expressive music with case-based reasoning.

The IAAI-12 articles selected for this issue describe emerging applications. Each article closely studies the application,



Call for Papers The Twenty-Fifth Annual Conference on Innovative Applications of Artificial Intelligence

July 14–18 2013
Bellevue, Washington USA

The Twenty-Fifth Annual Conference on Innovative Applications of Artificial Intelligence (IAAI-13) will be held July 14–18, 2013 in Bellevue, Washington, USA. The conference will focus on successful applications of AI technology. The conference will use technical papers, challenge papers, invited talks, and panel discussions to explore issues, methods, and lessons learned in the development and deployment of AI applications; and to promote an interchange of ideas between basic and applied AI.

IAAI-13 will consider papers in three tracks: (1) deployed application case studies, (2) challenge problem papers, and (3) emerging applications or methodologies. Submissions should clearly identify which track they are intended for, as the three tracks are judged on different criteria. Applications are defined as deployed once they are in production use by their final end users (not the people who created the application) for sufficiently long that experience can be reported (usually greater than three months of use by the end users). All submissions must be original.

The complete call for papers, as well as submission information, is available from www.aaai.org/iaai13

Timetable for Authors

- ⇒ *December 3, 2012 – January 17, 2013:* Authors register on the IAAI web site
- ⇒ *January 17, 2013:* Electronic papers due
- ⇒ *April 9, 2013:* Camera-ready copy due at AAAI office

describes how its real-world constraints shaped the technological approach, and reports on preliminary experiments on real data or in real environments. All of these articles supply useful insights into use cases that we hope can also be translated to other work of the AI community.

In the first of the emerging application articles, Machine Learning for Personalized Medicine: Predicting Primary Myocardial Infarction from Electronic Health Records by Jeremy C. Weiss, Sriraam Natarajan, Peggy L. Peissig, Catherine A. McCarty, and David Page, we learn about the promise and first results of analyzing medical records with statistical learning algorithms to augment current epidemiological practices to predict heart attacks. The second emerging application article, Toward Adapting Cars to Their Drivers, by Avi Rosenfeld, Zevi Bareket, Claudia V. Goldman, Sarit Kraus, David J. LeBlanc, and Omer Tsimhoni, describes and evaluates a further step and improvement in how automobiles support and adapt to our driving behavior by automatically learning our preferences.

The final IAAI-12 article in this issue is TRUSTS: Scheduling Randomized Patrols for Fare Inspection in Transit Systems Using Game Theory by Zhengyu Yin, Albert Xin Jiang, Milind Tambe, Christopher Kiekintveld, Kevin Leyton-Brown, Tuomas Sandholm, and John P. Sullivan. This article describes an attempt to optimize police inspection in a distributed subway system for effectiveness while also respecting the constraints of the people involved.

We hope you enjoy and learn from the articles in this and the next issue of AI Magazine. We also invite you to submit a description of your AI application to future iterations of the Innovative Applications of Artificial Intelligence Conference, sponsored by AAAI.

Markus Fromherz was chair of the 2012 Innovative Applications of Artificial Intelligence conference. He is a scientist and the chief innovation officer for healthcare at Xerox, and is a former director at the Palo Alto Research Center.

Héctor Muñoz-Avila was the cochair of the 2012 Innovative Applications of Artificial Intelligence conference. He is an associate professor at the Department of Computer Science and Engineering at Lehigh University.