Editorial Introduction to the Special Articles on Innovative AI Applications

Research Updates from the Deployed Applications of the 2018 Innovative Applications of Artificial Intelligence Conference (IAAI-18)

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■ *This editorial introduces several of the deployed applications that were described at the 2018 Innovative Applications of Artificial Intelligence conference, held in New Orleans, Louisiana, in February 2018.*

The 30th Annual Conference on the Innovative Applications of Artificial Intelligence (IAAI-18), the premier conference on applied artificial intelligence (AI) research ranging from exciting new potential applications to innovative full deployments of AI technology, was held in New Orleans, Louisiana, in February 2018. IAAI is colocated with the Association for the Advancement of Artificial Intelligence Conference on Artificial Intelligence, and the paper presentations and invited talks of the two conferences are coordinated. This enables conference attendees to seamlessly move between conferences fostering interest in applied AI research while keeping track of the latest results of AI research.

IAAI presents papers in three tracks: deployed applications, emerging applications, and challenge problems. The deployed applications track focuses on fielded AI applications that distinguish themselves for their innovative use of AI technology. Deployed applications are those that are in production use

by their final end-users for sufficiently long, usually three months or longer, such that the in-use experience can be meaningfully collected, evaluated, and reported. This is no small feat! IAAI-18 had a diverse set of seven papers in this track: one on improving government human-resource services deployed in three cities (Zheng et al. 2018); one on improving employee shift schedules with complex constraints used in two types of businesses (Hoshino et al. 2018); one discussing the learnings from deploying sketch technologies in two science, technology, engineering, and mathematics classes (Forbus et al. 2018); one on machine-learned revenue forecasting models used in a major software development company (Barker et al. 2018); one on a question-answering system used in an enterprise information technologies helpdesk (Mani et al. 2018); one on an interactive learning system used to optimize multivariate deployed user interface changes available commercially (Miikkulainen et al. 2018); and one that was a unique insight into an analytics, analysis, and dynamic adjustment system integrated into the products of several game studios through their major publisher (Kolen et al. 2018).

In this *AI Magazine* series, we will revisit several of these deployed applications with an update on those papers with new insights, details, and results from their completed or ongoing deployments. We will also feature an article from Stephen F. Smith, Carnegie Mellon University, who is the 2018 recipient of the Robert S. Engelmore Memorial Lecture Award for his sustained research excellence in constraint-based planning and scheduling technologies, deployment of those technologies to a range of significant real-world problems, and extensive service to the AI community that includes significant outreach to related technical fields. The original deployed applications papers as well as the emerging application and challenge problem papers can be found online at the Association for the Advancement of Artificial Intelligence Digital Library in the 2018 Association for the Advancement of Artificial Intelligence Conference on Artificial Intelligence Proceedings.

The IAAI Conference could not take place without the generous help of many people that include the program committee, invited speakers, Robert S. Engelmore Memorial Lecture Award recipient and selection committee, and authors of the technical papers — thank you! We also want to acknowledge the professional administrative and planning expertise of Association for the Advancement of Artificial Intelligence that help make sharing this work possible. We hope that you enjoy reading about these innovative, deployed applications of AI, and that you will consider sharing your own deployed AI applications at a future IAAI conference.

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