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GUEST EDITORIAL

Special Issue: AI in Manufacturing: State of the Art

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The AAAI Special Interest Group on AI in Manufacturing (SIGMAN) organization represents a wide array of researchers addressing fundamental scientific problems that arise in engineering design and manufacturing. The human endeavor that is design and manufacturing is rich in basic problems for researchers in Artificial Intelligence. From process planning researchers who aim to augment the abilities of human process engineers, to those who employ agents and distributed AI to model and control the factory floor—AI has found one of its most fertile and challenging proving grounds in the manufacture of products.

The idea for this AAAI SIGMAN-sponsored Special Issue of the Journal of *Artificial Intelligence in Engineering Design, Analysis and Manufacturing* (***AI****EDAM*) grew out of SIGMAN's "AI in Manufacturing" workshops held at Albuquerque, New Mexico in 1996 and 1998. The goal of the issue was to identify a representative selection of papers from the academic and industrial AI research community providing a cross-section of the recent advances in the integration of AI and manufacturing. The selection of papers in this issue includes contributions in core areas of AI and Manufacturing: Knowledge Representation (Schlenoff et al.), Computer-Aided Design and Analysis (Yang and Marefat), Process Planning (Nau et al, Gaines et al., Lukibanov et al), Agents and Shop-Floor Control (Barber et al.). This collection of papers is representative of the highly interdisciplinary nature of research on AI in Manufacturing. Manufacturing continues to be a premiere proving ground for AI, with real-world problems that are hard to represent and combinatorially brutal on our best algorithms. Researchers in these areas often find that they produce deep research insights that advance both AI and manufacturing sciences. I, and SIGMAN, are proud to provide a representative sample of recent results in this special issue.

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