

## Using analogical reasoning for mechanism design

Issa, G. Shen, S. Meng Sang Chew  
Pennsylvania Coll. of Technol., University Park, PA

### ABSTRACT

Our experience in developing a traditional expert system motivated us to develop a practical system that applies analogical reasoning to mechanism design. The new system could use existing solutions (apply analogical reasoning) to synthesize new mechanisms; use more informative knowledge representation so it could reason effectively and more meaningfully; and incorporate multiple reasoning capabilities, so it could generate new conceptual designs more intelligently. We called the system Smarts (Synthesis of Mechanisms using Analogical Reasoning Techniques). Traditional expert systems design mechanisms by exhaustive generation and evaluation. This system learns from experience to design mechanism more simply and efficiently

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