SYMPOSIUM

Cognitive Models of Problem Solving

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CASCADE and Self-explanation

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Modeling Analogical Problem Solving

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Problem Solving as Parallel Constraint Satisfaction

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Case-Based Planning and Opportunism

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Abstract

This symposium highlights what Cognitive Science has gained from recent research in cognitive modelling. The symposium brings together several research teams that share the methodological approach of refining computational models through empirical studies of human problem solvers. The models include the ACME constraint satisfaction network model, the SME model of analogy, the CASCADE process model of problem solving, and Case-Based Reasoning models. These projects represent a diverse set of approaches to computational modelling, and embody very different architectures for cognition. While each approach has contributed unique findings, these models also share a unifying set of assumptions about how cognitive constraints structure problem solving processes. By presenting these diverse approaches to cognitive modeling within a single session, we plan to promote discussion of the principles underlying all such models, and highlight the progress that can be made by combining constraints from computation and cognition.