

Lecture Notes in Artificial Intelligence

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A Perspective of Constraint-Based Reasoning

An Introductory Tutorial

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Preface

Constraints are a recurring topic in Artificial Intelligence (AI) about which a wealth of literature has been written. Constraint techniques have been used in many computer programs, and a considerable amount of sub-concepts of constraints, specializations and algorithms have been produced, the relationships between which aren't always as apparent as one would like them to be. So, there seems to be some demand for a more general view of the field.

Our text is an attempt to present many facets of the field in a uniform way. It is based on the material for two tutorials we gave at the 1991 conference of the British Society for the Study of AI and Simulation of Behaviour (AISB91) and at the annual German Workshop on AI in 1991 (GWAI-91).

We would not have been able to write this text outside the creative atmosphere of AI groups like the ones at the German National Research Center for Computer Science (GMD) at Sankt Augustin, Germany, and at the International Computer Science Institute (ICSI) at Berkeley, California, where you have people sitting next-door who are engaged in all these interesting things like nonmonotonic reasoning, connectionism, Boltzmann machines, or reflective systems. In addition, we received fruitful comments and questions from the tutorial participants.

Thanks to Thomas Christaller for allowing us to close our doors for some weeks to write this text. Moreover, we are grateful to our colleagues in the *qwertz* project on AI planning methods for doing without us for some time: after all, this is not really planning.

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Sankt Augustin,
March 1992

Hans Werner Guesgen
Joachim Hertzberg

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